

AMERICAN VANGUARD CORP  
Form 10-K  
March 14, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For The Year Ended December 31, 2017

OR

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 001-13795

AMERICAN VANGUARD CORPORATION

Delaware  
(State or other jurisdiction of

95-2588080  
(I.R.S. Employer

Incorporation or organization)

Identification Number)

4695 MacArthur Court, Newport Beach, California  
(Address of principal executive offices)

92660  
(Zip Code)

(949) 260-1200

(Registrant's telephone number, including area code)

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

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Title of each class:                      Name of each exchange on which registered:  
Common Stock, \$.10 par value    New York Stock Exchange

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

NONE

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

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.    Yes      No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).    Yes      No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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.

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	(Do not check if a smaller reporting company)
	Emerging growth company

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

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

The aggregate market value of the voting stock of the registrant held by non-affiliates is \$513.4 million. This figure is estimated as of June 30, 2017 at which date the closing price of the registrant's Common Stock on the New York Stock Exchange was \$17.25 per share. For purposes of this calculation, shares owned by executive officers, directors, and 5% stockholders known to the registrant have been deemed to be owned by affiliates. The number of shares of \$.10 par value Common Stock outstanding as of June 30, 2017, was 29,761,490. The number of shares of \$.10 par value Common Stock outstanding as of February 16, 2018 was 29,848,921.



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December 31, 2017

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(Dollars in thousands, except per share data)

PART I

Unless otherwise indicated or the context otherwise requires, the terms “Company,” “we,” “us,” and “our” refer to American Vanguard Corporation and its consolidated subsidiaries (“AVD”).

Forward-looking statements in this report, including without limitation, statements relating to the Company’s plans, strategies, objectives, expectations, intentions, and adequacy of resources, are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Investors are cautioned that such forward-looking statements involve risks and uncertainties. (Refer to Part I, Item 1A, Risk Factors and Part II, Item 7, Management’s Discussion and Analysis of Financial Condition and Results of Operation, included in this Annual Report.)

ITEM 1 BUSINESS

American Vanguard Corporation (“AVD”) was incorporated under the laws of the State of Delaware in January 1969 and operates as a holding company. Unless the context otherwise requires, references to the “Company” or the “Registrant,” in this Annual Report refer to AVD. The Company conducts its business through its subsidiaries, AMVAC Chemical Corporation (“AMVAC”), GemChem, Inc. (“GemChem”), 2110 Davie Corporation (“DAVIE”), Quimica Amvac de Mexico S.A. de C.V. (“AMVAC M”), AMVAC Mexico Sociedad de Responsabilidad Limitada (“AMVAC M Srl”), AMVAC de Costa Rica Sociedad de Responsabilidad Limitada (“AMVAC CR Srl”), AMVAC Switzerland GmbH (“AMVAC S”), AMVAC do Brasil Representações Ltda (“AMVAC B”), AMVAC C.V. (“AMVAC CV”), AMVAC Netherlands BV (“AMVAC BV”), Envance Technologies, LLC (“Envance”) and AMVAC Singapore Pte, Ltd (“AMVAC Sgpr”) and Huifeng AMVAC Innovation Co. Limited (“Hong Kong JV”), OHP Inc. (“OHP”) and Grupo AgriCenter (including the parent AgriCenter S.A. and its subsidiaries (“AgriCenter”).

Based on similar economic and operational characteristics, the Company’s business is aggregated into one reportable segment. Refer to Part II, Item 7 for selective enterprise information.

AMVAC

AMVAC is a California corporation that traces its history from 1945 and is a specialty chemical manufacturer that develops and markets products for agricultural, commercial and consumer uses. It manufactures and formulates chemicals for crops, turf and ornamental plants, and human and animal health protection. These chemicals, which include insecticides, fungicides, herbicides, molluscicides, growth regulators, and soil fumigants, are marketed in liquid, powder, and granular forms. In prior years, AMVAC considered itself a distributor-formulator, but now AMVAC primarily synthesizes, formulates, and distributes its own proprietary products or custom manufactures or formulates for others. In addition, the Company has carved out a leadership position in closed delivery systems, currently offers certain of its products in SmartBox, Lock ‘n Load and EZ Load systems, and is developing a precision application technology known as SIMPAS (see “Intellectual Property” below) which will permit the delivery of multiple products (from AMVAC and/or other companies) at variable rates in a single pass. AMVAC has historically expanded its business through both the acquisition of established chemistries (which it has revived in the marketplace) and the development and commercialization of new compounds through licensing arrangements. Below is a description of the Company’s acquisition/licensing activity over the past five years.

On October 27, 2017, the Company’s Netherlands-based subsidiary, AMVAC BV, completed the purchase of AgriCenter S.A., a distribution company based in Costa Rica. AgriCenter markets and distributes end-use chemical and biological products throughout Central America, primarily for crop applications. The acquired assets included

product registration, trade names and trademarks, customer lists, personnel, fixed assets, goodwill and working capital.

On October 2, 2017, AMVAC acquired substantially all of the assets of OHP, a US-based distribution company specializing in the greenhouse and nursery production markets. The acquired assets included existing product rights, trade names, customer relationships, personnel, goodwill, fixed assets and working capital.

On August 22, 2017, AMVAC BV, completed the acquisition of certain selective herbicides and contact fungicides including chlorothalonil, ametryn, and isopyrazam, sold in the Mexican agricultural market. The assets were purchased from Syngenta AG and used on various crops such as sugarcane, tomatoes, potatoes and hot peppers. The acquired assets included product registrations, trademarks and trade names, customer lists, and associated inventory.

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On June 6, 2017, the Company's principal operating subsidiary, AMVAC, completed an acquisition of certain herbicides, fungicides and insecticides assets relating to the abamectin, chlorothalonil and paraquat product lines from a group of companies, including Adama Agricultural Solutions, Ltd. These products are used on a wide range of crops such as citrus, cotton, nuts, fruits and vegetables. The acquired assets included product registrations, trademarks and trade names, customer lists, and associated inventory.

On January 13, 2017, the Company acquired from The Andersons, Inc. certain assets relating to proprietary formulations containing PCNB, chlorothalonil and propiconazole which are marketed under the name FFII and FFIII. The acquired assets included end use registrations.

On June 27, 2017, both AMVAC BV and Huifeng made individual capital contributions of \$950 to the Hong Kong JV. On July 7, 2017, the Hong Kong JV purchased 100% of the shares of Profeng Australia, Pty Ltd. ("Profeng"), for a total consideration of \$1,900.

On February 29, 2016, AMVAC BV purchased shares constituting a 15% interest in BiPA NV/SA, a Belgian company specializing in the development and early commercialization of biological products for use in agriculture. Through this investment, AMVAC BV obtained possible future access to a pipeline of new biological products for potential commercialization either individually in certain territories or in combination with the Company's existing product portfolio.

On October 26, 2015, AMVAC entered into a license and supply agreement with Badische Anilin-und Soda Fabrik ("BASF") under which BASF sold and AMVAC acquired certain assets (principally inventory) relating to the imazaquin product line. Imazaquin is an herbicide that is used on soybeans and for certain non-crop applications.

On April 29, 2015, the registrant's international subsidiary, AMVAC CV, completed the acquisition of certain assets related to the bromacil herbicide product line from DuPont Crop Protection. The assets acquired included the Hyvar<sup>®</sup> and Krovar<sup>®</sup> trademarks, product registrations, trade names, customer lists and associated inventory. The territory included all markets outside North America.

On April 6, 2015, the registrant's international subsidiary, AMVAC CV, completed the acquisition of certain assets related to the Namacur<sup>®</sup> insecticide/nematicide product line from Adama Agricultural Solutions Ltd ("Adama"). The assets acquired include product registrations, trademarks, customer lists, manufacturing know-how and associated inventory. The territories include European countries.

On March 25, 2013, AVD made an equity investment in TyraTech Inc. ("TyraTech"), a Delaware corporation that specializes in developing, marketing and selling pesticide products containing natural oils and other natural ingredients. As of December 31, 2017, the Company's ownership position in TyraTech was approximately 15.11%. At a special meeting conducted on December 27, 2017, TyraTech shareholders approved the sale of its Vamouse product line to Alliance Pharmaceuticals, Ltd and the use of some of the proceeds from such sale for a tender offer for TyraTech shares. That tender offer was concluded in January 2018. AMVAC elected not to exercise its right to sell into such tender offer and, as a result, the Company's ownership interest in TyraTech increased to approximately 35% at the conclusion of that transaction.



### Seasonality

The agricultural chemical industry, in general, is cyclical in nature. The demand for AMVAC's products tends to be seasonal. Seasonal usage, however, does not necessarily follow calendar dates, but more closely follows varying growing seasonal patterns, weather conditions, geography, weather related pressure from pests and customer marketing programs.

### Backlog

AMVAC does not believe that backlog is a significant factor in its business. AMVAC primarily sells its products on the basis of purchase orders, although from time to time it has entered into requirements contracts with certain customers.

### Customers

The Company's largest three customers accounted for 13%, 10% and 10% of the Company's sales in 2017; 15%, 11% and 8% in 2016; and 14%, 11% and 10% in 2015.

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### Distribution

AMVAC predominantly distributes its products domestically through national distribution companies and buying groups or co-operatives, which purchase AMVAC's goods on a purchase order basis and, in turn, sell them to retailers/growers/end-users. The Company manages its international sales through AMVAC BV, which has sales offices in Mexico and Costa Rica and sales force executives or sales agents in other territories. The Company's domestic and international distributors, agents and customers typically have long-established relationships with retailers/end-users, far-reaching logistics, transportation capabilities and/or customer service expertise. The markets for AMVAC products vary by region, target crop, use and type of distribution channel. AMVAC's customers are experts at addressing these various markets.

As more fully described above, during 2017, the Company acquired two distribution companies: the first, OHP, a domestic company operating in the turf and ornamental market, and the second, AgriCenter, which operates in several countries within Central America. Both of these businesses primarily market and distribute the formulated end-use product of third parties under either the brand of the third party or as a private label product. Prior to being acquired by the Company, both OHP and AgriCenter distributed small quantities of the Company's products.

### Competition

In its many marketplaces, AMVAC faces competition from both domestic and foreign manufacturers. Many of our competitors are larger and have substantially greater financial and technical resources than AMVAC. AMVAC's capacity to compete depends on its ability to develop additional applications for its current products and/or expand its product lines and customer base. AMVAC competes principally on the basis of the quality and efficacy of its products, price and the technical service and support given to its customers.

Generally, the treatment against pests of any kind is broad in scope, there being more than one way, or one product, for treatment, eradication, or suppression. In some cases, AMVAC has positioned itself in smaller niche markets which are no longer addressed by larger companies. In other cases, for example in the Midwestern corn market, the Company competes directly with larger competitors.

### Manufacturing

Through its four domestic manufacturing facilities (see Item 2, Properties), AMVAC synthesizes many of the technical grade active ingredients that are in its end-use products. Further, AMVAC formulates and packages its end use products at its own facilities or at the facilities of third-party formulators.

### Raw Materials

AMVAC utilizes numerous companies to supply the various raw materials and components used in manufacturing its products. Many of these materials are readily available from domestic sources. In those instances where there is a single source of supply or where the source is not domestic, AMVAC seeks to secure its supply by either long-term (multi-year) arrangements or purchasing on long lead times from its suppliers.

## Intellectual Property

AMVAC's proprietary product formulations are protected, to the extent possible, as trade secrets and, to a lesser extent, by patents. Certain of the Company's closed delivery systems are patented and AMVAC has made applications for related inventions to expand its equipment portfolio, particularly with respect to its Smart Integrated Multi-Product Precision Application System, ("SIMPAS") technology. Further, AMVAC's trademarks bring value to its products in both domestic and foreign markets. AMVAC considers that, in the aggregate, its trademarks, licenses, and patents constitute a valuable asset. While it does not regard its business as being materially dependent upon any single trademark, license, or patent, it believes that its developmental equipment technology may bring significant value in future years.

## EPA Registrations

In the United States, AMVAC's products also receive protection afforded by the terms of the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA") legislation. The legislation makes it unlawful to sell any pesticide in the United States, unless such

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pesticide has first been registered by the United States Environmental Protection Agency (“USEPA”). Substantially all of AMVAC’s products, sold in United States, are subject to USEPA registration and periodic re-registration requirements and are registered in accordance with FIFRA. This registration by USEPA is based, among other things, on data demonstrating that the product will not cause unreasonable adverse effects on human health or the environment, when used according to approved label directions. In addition, each state requires a specific registration before any of AMVAC’s products can be marketed or used in that state. State registrations are predominantly renewed annually with a smaller number of registrations that are renewed on a multiple year basis.

Foreign jurisdictions typically have similar registration requirements by statute. The USEPA, state, and foreign agencies have required, and may require in the future, that certain scientific data requirements be performed on registered products sold by AMVAC. AMVAC, on its own behalf and in joint efforts with other registrants, has furnished, and is currently furnishing, required data relative to specific products.

Under FIFRA, the federal government requires registrants to submit a wide range of scientific data to support U.S. registrations. This requirement results in operating expenses in such areas as regulatory compliance, with USEPA and other such bodies in the markets in which the Company sells its products. In addition, the Company is required to generate new formulations of existing products or to produce new products in order to remain compliant. AMVAC expensed \$14,232, \$11,544, and \$9,831 during 2017, 2016 and 2015 respectively, on these activities.

	2017	2016	2015
Registration	\$9,450	\$7,750	\$6,375
Product development	4,782	3,794	3,456
	\$14,232	\$11,544	\$9,831

## Environmental

During 2017, AMVAC continued activities to address environmental issues associated with its facility in Commerce, CA. (the “Facility”). An outline of the history of those activities follows.

In 1995, the California Department of Toxic Substances Control (“DTSC”) conducted a Resource Conservation and Recovery Act (“RCRA”) Facility Assessment (“RFA”) of those facilities having hazardous waste storage permits. In March 1997, the RFA culminated in DTSC accepting the Facility into its Expedited Remedial Action Program. Under this program, the Facility was required to conduct an environmental investigation and health risk assessment. This activity then took two paths: first, the RCRA permit closure and second, the larger site characterization.

With respect to the RCRA permit closure, in 1998, AMVAC began the formal process to close its hazardous waste permit at the Facility (which had allowed AMVAC to store hazardous waste longer than 90 days) as required by federal regulations. Formal regulatory closure actions began in 2005 and were completed in 2008, as evidenced by DTSC’s October 1, 2008 acknowledgement of AMVAC’s Closure Certification Report.

With respect to the larger site characterization, soil and groundwater characterization activities began in December 2002 in accordance with the Site Investigation Plan that was approved by DTSC. Additional activities were conducted from 2003 to 2014, with oversight provided by DTSC. In 2014, the Company submitted a remedial action plan (“RAP”) to DTSC, under the provisions of which, the Company proposed not to disturb sub-surface contaminants, but to continue monitoring, maintain the cover above affected soil, enter into restrictive covenants regarding the potential use of the property in the future, and provide financial assurances relating to the requirements of the RAP. In January 2017, the RAP was circulated for public comment. DTSC responded to those comments and, on September 29, 2017, approved the RAP as submitted by the Company. The Company intends to prepare an operation and maintenance plan, to record covenants on certain affected parcels and to obtain further clarification on financial assurance obligations relating to the RAP. At this stage, the Company does not believe that costs to be incurred in connection with the RAP will be material and has not recorded a loss contingency for these activities.

AMVAC is subject to numerous federal and state laws and governmental regulations concerning environmental matters and employee health and safety at its four manufacturing facilities. The Company continually adapts its manufacturing process to the environmental control standards of the various regulatory agencies. The USEPA and other federal and state agencies have the authority to promulgate regulations that could have an impact on the Company’s operations.

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AMVAC expends substantial funds to minimize the risk of discharge of materials in the environment and to comply with the governmental regulations relating to protection of the environment. Wherever feasible, AMVAC recovers and recycles raw materials and increases product yield in order to partially offset increasing pollution abatement costs.

The Company is committed to a long-term environmental protection program that reduces emissions of hazardous materials into the environment, as well as to the remediation of identified existing environmental concerns.

Employees

As of December 31, 2017, the Company employed 605 employees. This includes 130 employees that joined the Company following the acquisitions completed during the final quarter of 2017. The Company employed 395 employees as of December 31, 2016 and 369 employees as of December 31, 2015. From time to time, due to the seasonality of its business, AMVAC uses temporary contract personnel to perform certain duties primarily related to packaging of its products. None of the Company's employees are subject to a collective bargaining agreement. The Company believes it maintains positive relations with its employees.

Domestic operations

AMVAC is a California corporation that was incorporated under the name of Durham Chemical in August 1945. The name of the corporation was subsequently changed to AMVAC in January 1973. As the Company's main operating subsidiary, AMVAC owns and/or operates the Company's domestic manufacturing facilities and is also the parent company (owns 99%) of AMVAC CV. AMVAC manufactures, formulates, packages and sells its products in the USA and is a wholly owned subsidiary of AVD.

GemChem is a California corporation that was incorporated in 1991 and was subsequently purchased by the Company in 1994. GemChem sells into the pharmaceutical, cosmetic and nutritional markets, in addition to purchasing key raw materials for the Company. GemChem is a wholly owned subsidiary of AVD.

DAVIE owns real estate for corporate use only. See also Part I, Item 2 of this Annual Report on Form 10-K. DAVIE is a wholly owned subsidiary of AVD.

Envance is a Delaware Limited Liability Company and is a majority owned subsidiary of the Company. It was formed in 2012 with joint venture partner, TyraTech. AMVAC's initial shareholding was 60% and its shareholding increased to 87% in 2015. Envance has the rights to develop and commercialize pesticide products and technologies made from natural oils in global consumer, commercial, professional, crop protection and seed treatment markets and has begun bringing products to market.

On October 2, 2017, AMVAC, through a wholly-owned acquisition subsidiary, subsequently renamed OHP, purchased substantially all of the assets of OHP, a domestic distribution company specializing in products for the turf and ornamental market. OHP markets and sells end use products for third parties, either under the third party brand or else as own label products.

International operations

In July 2012, the Company formed AMVAC CV, which is incorporated in the Netherlands, for the purpose of managing foreign sales on behalf of the Company. AMVAC CV is owned jointly by AMVAC as the general partner, and AVD International, LLC (also formed in July 2012 as a wholly owned subsidiary of AMVAC), as the limited partner, and is therefore a wholly owned subsidiary of AMVAC.

AMVAC BV is a registered Dutch private limited liability company that was formed in July 2012. AMVAC BV is located in the Netherlands and is wholly owned by AMVAC CV. During 2017, the international business sold the Company's products in 63 countries, as compared to 59 countries in 2016.

AMVAC M Srl is a wholly owned subsidiary of AMVAC BV and was formed in 1998 (originally formed as AMVAC M and changed to AMVAC Mexico Srl in 2013) to conduct the Company's business in Mexico.

AMVAC Sgpr is a wholly owned subsidiary of AMVAC BV and was formed on April 12, 2016. This new entity was formed to conduct the Company's business in the Asia Pacific and China region.

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Hong Kong JV is a 50% owned joint venture with Huifeng (Hong Kong) Limited, a wholly owned subsidiary of Huifeng Agrochemical Company, Ltd, (“Huifeng”) a China based basic chemical manufacturer. The Hong Kong JV was formed on August 2, 2016. The purpose of the joint venture is to be a technology transfer platform between the co-owners, including the development of proprietary agrochemical formulations and precision application systems for crop protection. Furthermore, it is intended to be used to develop both partners’ business in the region. This included, in 2017, the acquisition of 100% of the shares of Profeng.

On October 27, 2017, AMVAC BV purchased the stock of AgriCenter, located in Costa Rica, which owned shares in subsidiaries located in Costa Rica, Panama, Nicaragua, Honduras, the Dominican Republic, Mexico, Guatemala, and El Salvador. These affiliated entities, collectively known as AgriCenter, market, sell and distribute end-use chemical and biological products throughout Central America primarily for crop applications.

The Company classifies as international sales all products bearing foreign labeling shipped to a foreign destination.

	2017	2016	2015
International sales	\$98,905	\$83,259	\$77,295
Percentage of net sales	27.9 %	26.7 %	26.7 %

## Risk Management

The Company regularly monitors matters, whether insurable or not, that could pose material risk to its operations, the safety of its employees and neighbors, and its financial performance. The Risk Committee of the Board of Directors (“Board”) was formed in 2010, consists of three members of the Board and meets regularly. All members of the Board are invited to and typically attend Risk Committee meetings. Working with senior management, the committee continuously evaluates the Company’s risk profile, identifies mitigation measures and ensures that the Company is prudently managing these risks. In support of the Risk Committee, senior management has appointed a risk manager and designated several senior executives to lead teams focused on addressing each of the most material risks facing the Company; these groups perform analysis with the benefit of operational knowledge. The top risks identified by management and being addressed by risk teams (in no particular order) include: adverse political and regulatory climate; managing inventory and optimizing manufacturing efficiency; succession planning and bench strength; maintaining a competitive edge in the marketplace; the possibility of an environmental event; undervaluation of the Company; availability of acquisition and licensing targets and cyber-terrorism. Over the course of 2017, the Company continued to implement its enterprise risk management program, which extends to all areas of potential risk and is a permanent feature in the Company’s operation. In addition, the Company continually evaluates insurance levels for product liability, property damage and other potential areas of risk. Management believes its facilities and equipment are adequately insured against loss from usual business risks including cyber-terrorism.

## Available Information



The Company makes available free of charge (through its website, [www.american-vanguard.com](http://www.american-vanguard.com)), its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with the Securities and Exchange Commission (“SEC”). All reports filed with the SEC are available free of charge on the SEC website, [www.sec.gov](http://www.sec.gov). Also available free of charge on the Company’s website are the Company’s Audit Committee, Compensation Committee, Finance Committee and Nominating and Corporate Governance Committee Charters, the Company’s Corporate Governance Guidelines, the Company’s Code of Conduct and Ethics, the Company’s Employee Complaint Procedures for Accounting and Auditing Matters and the Company’s policy on Stockholder Nomination and Communication. The Company’s Internet website and the information contained therein or incorporated therein are not intended to be incorporated into this Annual Report on Form 10-K.

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ITEM 1A. RISK FACTORS

The regulatory climate remains challenging to the Company's interests both domestically and internationally—Various agencies within the U.S. (both federal and state) and foreign governments continue to exercise increased scrutiny in permitting continued uses (or the expansion of such uses) of older chemistries, including many of the Company's products and, in some cases, have initiated or entertained challenges to these uses. The challenge of the regulatory climate is even more pronounced in certain other geographical regions where the Company faces resistance to the continued use of certain of its products. For example, the EU employs a hazard-based analysis when considering whether product registrations can be maintained; under this approach, EU regulatory authorities typically do not weigh benefit against risk in their assessments and routinely cancel products for which a safer alternative is available, notwithstanding the benefit of the cancelled product. There is no guarantee that this regulatory climate will change in the near term or that the Company will be able to maintain or expand the uses of many of its products in the face of these regulatory challenges.

USEPA has proposed further limitations on the continued registration of organophosphates—On September 25, 2015 the USEPA published in the Federal Register draft human health risk assessments for four of the Company's organophosphate ("OP") compounds (marketed under the names Bidrin®, Counter®, Folex® and Mocap®) in which it recommends the application of a 10X safety factor under the FQPA (Food Quality Protection Act) in light of the alleged possibility of neurodevelopmental harm to women and children based on epidemiological data. Since that time, in the face of objection from industry, the agency has applied this safety factor to all registered OPs, as they have come up for review or renewal. The Company, like many in our industry, believes that the basis for applying this safety factor is not based upon sound science and that the limited studies upon which the agency is relying (for which raw data is not available even to the agency) do not establish a causal link between the perceived harm and the use of its products. Accordingly, the Company intends to take all action necessary to defend its registrations. We have been joined in this effort by other companies that are similarly concerned about the potential impact of USEPA's action. Nevertheless, there is no guarantee that the Company's actions will alter the course that USEPA has proposed and, if the agency's position becomes final, some uses of the company's OP products could be limited or cancelled. Such action could have a material adverse effect upon the Company's financial performance in future reporting periods.

Use of the Company's products is subject to continuing challenges from activist groups—Use of agrochemical products, including the Company's products is regularly challenged by activist groups in many jurisdictions under a multitude of federal, state and foreign statutes, including FIFRA, the Food Quality Protection Act, Endangered Species Act ("ESA") and the Clean Water Act, to name a few. These challenges typically take the form of lawsuits or administrative proceedings against the USEPA and/or other federal, state or foreign agencies, the filing of amicus briefs in pending actions, the introduction of legislation that is inimical to the Company's interests, and/or adverse comments made in response to public comment invited by regulatory agencies in the course of registration, re-registration or label expansion. The most prominent of these actions include a line of cases under which environmental groups have sought to suspend, cancel or otherwise restrict the use of pesticides that have been approved by USEPA on the ground that that agency failed to confer with the National Marine Fishery Service and/or the Fish and Wildlife Service under the ESA with respect to biological opinions relating to the use of such products. While industry has been active in defending registrations and proposing administrative and legislative approaches to address serious resource issues at the affected agencies, these cases continue to be brought. It is possible that one or more of these challenges could succeed, resulting in a material adverse effect upon one or more of the Company's products.

The distribution and sale of the Company's products are subject to prior governmental approvals and thereafter ongoing governmental regulation—The Company's products are subject to laws administered by federal, state and foreign governments, including regulations requiring registration, approval and labeling of its products. The labeling requirements restrict the use of, and type of, application for our products. More stringent restrictions could make our products less available, which would adversely affect our revenues and profitability. Substantially all of the Company's products are subject to the USEPA (and/or similar agencies in the various territories or jurisdictions in which we do business) registration and re-registration requirements, and are registered in accordance with FIFRA or similar laws. Such registration requirements are based, among other things, on data demonstrating that the product will not cause unreasonable adverse effects on human health or the environment when used according to approved label directions. All states, where any of the Company's products are used, also require registration before products, such as the Company sells, can be marketed or used in that state. Governmental regulatory authorities have required, and may require in the future, that certain scientific data requirements be performed on the Company's products. The Company, on its behalf and also in joint efforts with other registrants, has and is currently furnishing certain required data relative to its products. There can be no assurance, however, that the USEPA or similar agencies will not request that certain tests or studies be repeated or that more stringent legislation or requirements will not be imposed in the future. The Company can provide no assurance that any testing approvals or registrations will be granted on a timely basis, if at all, or that its resources will be adequate to meet the costs of regulatory compliance.

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The manufacturing of the Company's products is subject to governmental regulations—The Company currently owns and operates three manufacturing facilities which are located in Los Angeles, California; Axis, Alabama; and Marsing, Idaho and owns and has manufacturing services provided in a fourth facility in Hannibal, Missouri (the "Facilities"). The Facilities operate under the laws and regulations imposed by state and local authorities. The manufacturing of key ingredients for certain of the Company's products occurs at the Facilities. An inability to renew or maintain a license or permit, or a significant increase in the fees for such licenses or permits, could impede the Company's manufacture of one or more of its products and/or increase the cost of production; this, in turn, would materially and adversely affect the Company's ability to provide customers with its products in a timely and affordable manner.

The Company may be subject to environmental liabilities—While the Company expends substantial funds to minimize the risk of discharge of materials into the environment and to comply with governmental regulations relating to protection of the environment and its workforce, federal and state authorities may nevertheless seek fines and penalties for any violation of the various laws and governmental regulations. In addition, while the Company continually adapts its manufacturing processes to the environmental control standards of regulatory authorities, it cannot completely eliminate the risk of accidental contamination or injury from hazardous or regulated materials. Further, these various governmental agencies could, among other things, impose potential civil and criminal liability arising under RCRA for the Company's importation (transportation, handling, and storage) of depleted Thimet containers (see, "Legal Proceedings" below). In short, the Company may be held liable for significant damages or fines relating to any environmental contamination, injury, or compliance violation which could have a material adverse effect on the Company's consolidated financial condition, statements of operations and cash flows.

Newly acquired businesses may not generate forecasted results. While the Company conducts due diligence on acquisitions and employs rigorous investment criteria before making acquisitions, there is no guarantee that a business or product line acquired by the Company will generate results that meet or exceed results that were forecasted by the Company in evaluating the acquisition. There are many factors that could affect the performance of a newly acquired business or product line. While the Company uses conservative assumptions in valuing a business prior to concluding an acquisition, actual results generated post-closing could vary widely from the Company's forecast and, as such, could have a material effect upon the Company's overall financial performance.

The Company's investment in foreign businesses may pose additional risks. With the expansion of its footprint internationally and, in particular, with the business acquired in Central America in 2017, the Company now carries on business at a material level in some jurisdictions that have a history of political instability, including civil unrest, government takings without reimbursement, and the imposition of penalties without due process of law. While such instability may not be present at the current time, there is no guarantee that conditions will not change in one or more jurisdictions quickly and without notice, nor is there any guarantee that the Company would be able to recoup its investment in such territories in light of such changes. Adverse changes of this nature could have a material effect upon the Company's overall financial performance.

The Company's investment in technology may not generate forecasted returns. The Company has had a history of investing in technological innovation primarily focused on product delivery systems as one of its core strategies. We have focused on technology in closed delivery systems, fumigant application and precision application, to name a few. These investments are based upon the premise that new technology will allow for safer handling of the Company's products, appeal to regulatory agencies and the market we serve, gain commercial acceptance and

command a return that is sufficiently in excess of the investment. However, there is no guarantee that a new technology will be successfully commercialized, generate a material return or maintain market appeal for a substantial period of time. Further, many types of development costs must be expensed in the period in which they are incurred. This, in turn, tends to put downward pressure on period profitability. There can be no assurance that these expenses will be recovered through successful commercialization of a new technology.

The Company's business may be adversely affected by cyclical and seasonal effects—Demand for the Company's products tends to be seasonal. Seasonal usage follows varying agricultural seasonal patterns, weather conditions and weather related pressure from pests. Weather patterns can have an impact on the Company's operations. For example, the end user of its products may, because of weather patterns, delay or intermittently disrupt field work during the planting season, which may result in a reduction of the use of some products and therefore may, at some point, reduce the Company's revenues and profitability. In light of the possibility of adverse seasonal effects, there can be no assurance that the Company will maintain sales performance at historical levels in any particular region.

The Company is dependent upon certain sole source suppliers for certain of its raw materials and active ingredients—There are a limited number of suppliers of certain important raw materials used by the Company in many of its products. Certain of these raw materials are available solely from single sources either domestically or overseas. Starting January 1, 2017, the Chinese

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government has placed significant restrictions on chemical manufacturing in the People's Republic of China. This, in turn, has led to closure of multiple manufacturing plants and scarcity of supply for certain products that are imported by the Company. In conjunction with the purchase and/or licensing of certain product lines, the Company has entered into multi-year supply arrangements under which such counterparties are the sole source of either active ingredients and/or formulated end-use product and, in some cases, the manufacturer has entered the market as a competitor. The Company is actively pursuing new supply agreements to mitigate the risk of product supply from the People's Republic of China, by either approving new suppliers outside of China, or conversely by pursuing new Chinese suppliers who have a stronger in situ backward integration position. There is no guarantee that any of our suppliers will be willing or able to supply these products to the Company reliably, continuously and at the levels anticipated by the Company or required by the market. If these sources prove to be unreliable and the Company is not able to supplant or otherwise second source these suppliers, it is possible that the Company will not realize its projected sales which, in turn, could adversely affect the Company's consolidated financial statements.

To the extent that capacity utilization is not fully realized at its manufacturing facilities, the Company may experience lower profitability—While the Company endeavors continuously to maximize utilization of its manufacturing facilities, our success in these endeavors is dependent upon many factors, including fluctuating market conditions, product life cycles, weather conditions, availability of raw materials, equipment failures, and regulatory constraints, among other things. There can be no assurance that the Company will be able to maximize the utilization of capacity at its manufacturing facilities.

The Company's continued success depends, in part, upon a limited number of key employees—Within certain functions, the Company relies heavily on a small number of key employees to manage ongoing operations and to perform strategic planning. In some cases, there are no internal candidates who are qualified to succeed these key personnel in the short term. In the event that the Company were to lose one or more key employees, there is no guarantee that the Company could replace them with people having comparable skills. Further, the loss of key personnel could adversely affect the operation of our business.

The Company faces competition in certain markets from new technologies and demand for organically produced food—The Company faces competition from larger companies that market new chemistries, genetically modified (“GMO”) seeds and other similar technologies (e.g., RNA interference) in certain of the crop protection sectors in which the Company competes, particularly that of corn. In fact, many growers that have chosen to use GMO seeds have reduced their use of the types of pesticides sold by the Company. At the same time, the demand for organically-produced food, which, generally speaking, is made without the use of synthetic chemicals (which constitute most of the Company's products) continues to increase. There is no guarantee that the Company will maintain its market share or pricing levels in sectors that are subject to competition from companies that market new technologies. Further, it is possible that increased demand for organic crops may, over time, reduce the demand for the Company's products.

The Company faces competition from generic competitors that source product from countries having lower cost structures—The Company continues to face competition from competitors around the globe that may enter the market through either offers to pay data compensation, or similar means in foreign jurisdictions, and then subsequently source material from countries having lower cost structures (typically India and China). These competitors typically tend to operate at thinner gross margins and, with low costs of goods, tend to drive pricing and profitability of subject product

lines downward. There is no guarantee that the Company will maintain market share and pricing over generic competitors or that such competitors will not offer generic versions of the Company's products in the future.

The Company's key customers typically carry competing product lines and may be influenced by the Company's larger competitors—A significant portion of the Company's products are sold to national distributors in the United States, which also carry product lines of competitors that are much larger than the Company. Typically, revenues from the sales of these competing product lines and related program incentives constitute a greater part of our distributors' income than do revenues from sales and program incentives arising from the Company's product lines. With the recent consolidation among domestic distribution companies, these considerations have become more pronounced. In light of these facts, there is no assurance that such customers will continue to market our products aggressively or successfully or that the Company will be able to influence such customers to continue to purchase our products instead of those of our competitors.

Industry consolidation may threaten the Company's position in various markets—The global agricultural chemical industry continues to undergo significant consolidation. Many of the Company's competitors have grown or are expected to grow through mergers and acquisitions. As a result, these competitors will tend to be in position to realize greater economies of scale, offer more diverse portfolios and thereby exert greater influence throughout the distribution channels. Consequently, the Company may find it more difficult to compete in various markets. While such merger activity may generate acquisition opportunities for the Company,

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there is no guarantee that the Company will benefit from such opportunities. Further, there is a risk that the Company's future performance may be hindered by the growth of its competitors through consolidation.

The Company is dependent on a limited number of customers, which makes it vulnerable to the continued relationship with and financial health of those customers—In 2017 and 2016, three customers accounted for 33% and 34%, respectively, of the Company's sales. The Company's future prospects may depend on the continued business of such customers and on our continued status as a qualified supplier to such customers. The Company cannot guarantee that these key customers will continue to buy products from us at current levels. The loss of a key customer could have a material adverse effect on the Company's consolidated financial statements.

The carrying value of certain assets on the Company's consolidated balance sheets may be subject to impairment depending upon market trends and other factors—The Company regularly reviews the carrying value of certain assets, including long-lived assets, inventory, fixed assets and intangibles. Depending upon the class of assets in question, the Company takes into account various factors including, among others, sales, trends, market conditions, cash flows, profit margins and the like. Based upon this analysis, where circumstances warrant the Company may leave such carrying values unchanged or adjust them as appropriate. There is no guarantee that these carrying values can be maintained indefinitely, and it is possible that one or more such assets could be subject to impairment which, in turn, could have an adverse impact upon the Company's consolidated financial statements.

The Company's computing systems are subject to cyber security risks – In the course of its operations the Company relies on its computing systems, including access to the internet, the use of third party applications and the storage and transmission of data through such systems. While the Company has implemented security measures to protect these systems, there is no guarantee that a third party may penetrate these defenses and either compromise, corrupt or shut down these systems. Further, in the event of such incursion it is possible that confidential business information and private personal data could be confiscated. Such an event could adversely affect both the Company's ability to operate and its overall financial performance

Reduced financial performance may limit the Company's ability to borrow under its credit facility—The Company has historically grown net sales through both expansion of current product lines, the acquisition of product lines from third parties and, during 2017, the acquisition of both domestic and international distributors with strong niche market positions. In order to finance such acquisitions, the Company has drawn upon its senior credit facility. However, the Company's borrowing capacity under the senior credit facility depends, in part, upon its satisfaction of a negative covenant that sets a maximum ratio of borrowed debt to earnings (as measured over the trailing 12 month period). There is no guarantee that the Company will continue to generate earnings necessary to ensure that it has sufficient borrowing capacity to support future acquisitions or that, when necessary, the lender group will amend the senior credit facility to provide for such borrowing capacity. Further, despite the Company's long-standing relationship with its lenders, in light of the uncertainties in global financial markets there is no guarantee that the Company's lenders will be either willing or able to continue lending to the Company at such rates and in such amounts as may be necessary to meet the Company's working capital needs.

The Company's growth has been fueled in part by acquisition—Over the past few decades, the Company's growth has been driven by acquisition and licensing of both established and developmental products from third parties. There is no guarantee that acquisition targets or licensing opportunities meeting the Company's investment criteria will remain



available or will be affordable. If such opportunities do not present themselves, then the Company may be unable to record consistent growth in future years.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None

ITEM 2 PROPERTIES

AMVAC owns in fee the Facility constituting approximately 152,000 square feet of improved land in Commerce, California ("Commerce") on which its West Coast manufacturing, some of its warehouse facilities and some of its manufacturing administrative offices are located.

DAVIE owns in fee approximately 72,000 square feet of warehouse, office and laboratory space on approximately 118,000 square feet of land in Commerce, California, which is leased to AMVAC. In 2013, the Company made a significant investment in the Glenn A. Wintemute Research Center, which houses the Company's primary research laboratory supporting synthesis, formulation and other new product endeavors.

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On December 28, 2007, AMVAC purchased certain manufacturing assets relating to the production of Thimet and Counter and located at BASF's multi-plant facility situated in Hannibal, Missouri (the "Hannibal Site"). Subject to the terms and conditions of the Agreement, AMVAC purchased certain buildings, manufacturing equipment, office equipment, fixtures, supplies, records, raw materials, intermediates and packaging constituting the "T/C Unit" of the Hannibal Site. The parties entered into a ground lease and a manufacturing and shared services agreement, under which BASF continues to supply various shared services to AMVAC for the Hannibal Site.

On March 7, 2008, AMVAC acquired from Bayer CropScience Limited Partnership, ("BCS LP"), a U.S. business of Bayer CropScience GmbH, a facility (the "Marsing Facility") located in Marsing, ID, which consists of approximately 17 acres of improved real property, 15 of which are owned by AMVAC and two of which AMVAC leases from the City of Marsing for a term of 25 years. The Marsing Facility is engaged in the blending of liquid and powder raw materials and the packaging of some of the Company's finished goods inventory in liquid, powder and pelletized formulations which are sold both in the US and internationally. With this acquisition, AMVAC acquired the ability to formulate flowable materials. In connection with the acquisition, AMVAC and BCS LP agreed to enter into a master processor agreement under which AMVAC provides certain third party manufacturing services to BCS LP on an ongoing basis that continued into 2015. Following the termination of the master supply agreement, AMVAC and BCS LP have continued to trade on a normal commercial basis.

In 2001, AMVAC completed the acquisition of a manufacturing facility (the "Axis Facility") from E.I. DuPont de Nemours and Company ("DuPont"). The Axis Facility is one of three such units located on DuPont's 510 acre complex in Axis, Alabama. The acquisition consisted of a long-term ground lease of 25 acres and the purchase of all improvements thereon. The facility is a multi-purpose plant designed for synthesis of active ingredients and formulation and packaging of finished products.

AMVAC regularly adds chemical processing equipment to enhance or expand its production capabilities. AMVAC believes its facilities are in good operating condition, are suitable and adequate for current needs, have flexibility to change products, and can produce at greater rates as required. Facilities and equipment are insured against losses from fire as well as other usual business risks. The Company knows of no material defects in title to, or encumbrances on, any of its properties except that substantially all of the Company's assets are pledged as collateral under the Company's credit facility agreements with its primary lender group. For further information, refer to note 2 of the Notes to the Consolidated Financial Statements in Part IV, Item 15 of this Annual Report on Form 10-K.

AMVAC owns approximately 42 acres of unimproved land in Texas for possible future expansion.

The Company leases approximately 19,953 square feet of office space located at 4695 MacArthur Court in Newport Beach, California. In September 2015 the lease was amended and was extended to expire on June 30, 2021. The premises have served as the Company's corporate headquarters since 1994.

AMVAC BV's, GemChem's, AMVAC M's, AMVAC M Srl's, AMVAC CR Srl's, AMVAC Sgpr's, OHP's and AgriCenter's facilities consist of administration and/or sales offices which are leased.

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ITEM 3 LEGAL PROCEEDINGS

A. DBCP Cases

Over the course of the past 30 years, AMVAC and/or the Company have been named or otherwise implicated in a number of lawsuits concerning injuries allegedly arising from either contamination of water supplies or personal exposure to 1, 2-dibromo-3-chloropropane (“DBCP®”). DBCP was manufactured by several chemical companies, including Dow Chemical Company, Shell Oil Company and AMVAC, and was approved by the USEPA to control nematodes. DBCP was also applied on banana farms in Latin America. The USEPA suspended registrations of DBCP in October 1979, except for use on pineapples in Hawaii. That suspension was partially based on 1977 studies by other manufacturers that indicated a possible link between male fertility and exposure to DBCP among their factory production workers involved with producing the product.

At present, there are three domestic lawsuits and approximately 85 Nicaraguan lawsuits filed by former banana workers in which AMVAC has been named as a party. Only two of the Nicaraguan actions have actually been served on AMVAC. With respect to Nicaraguan matters, there was no change in status during 2017. As described more fully below, activity in domestic cases during 2017 is as follows. The one case remaining in Delaware includes 57 plaintiffs who have appealed a lower court finding that the matter was barred by the statute of limitations; this matter has been stayed pending a ruling by the Delaware Supreme Court on the question of when or if the statute of limitations has run out. In Hawaii, in the matter of Patrickson, et. al. v. Dole Food Company, following the appellate court’s remand to the trial court for adjudication in 2016, there has been no activity; while in Adams, there has been no activity since 2014, when the court granted dismissal of co-defendant Dole on the basis of a worker’s compensation bar and gave plaintiffs leave to amend their complaint in light of that ruling.

Nicaraguan Matters

A review of court filings in Chinandega, Nicaragua, has found 85 suits alleging personal injury allegedly due to exposure to DBCP and involving approximately 3,592 plaintiffs have been filed against AMVAC and other parties. Of these cases, only two – Flavio Apolinar Castillo et al. v. AMVAC et al., No. 535/04 and Luis Cristobal Martinez Suazo et al. v. AMVAC et al., No. 679/04 (which were filed in 2004 and involve 15 banana workers) – have been served on AMVAC. All but one of the suits in Nicaragua have been filed pursuant to Special Law 364, an October 2000 Nicaraguan statute that contains substantive and procedural provisions that Nicaragua’s Attorney General previously expressed as unconstitutional. Each of the Nicaraguan plaintiffs’ claims \$1 million in compensatory damages and \$5 million in punitive damages. In all of these cases, AMVAC is a joint defendant with Dow Chemical Company and Dole Food Company, Inc. AMVAC contends that the Nicaragua courts do not have jurisdiction over it and that Public Law 364 violates international due process of law. AMVAC has objected to personal jurisdiction and demanded under Law 364 that the claims be litigated in the United States. In 2007, the court denied these objections, and AMVAC appealed the denial. It is not presently known as to how many of these plaintiffs actually claim exposure to DBCP at the time AMVAC’s product was allegedly used nor is there any verification of the claimed injuries. Further, to date, plaintiffs have not had success in enforcing Nicaraguan judgments against domestic companies before U.S. courts. With respect to these Nicaraguan matters, AMVAC intends to defend any claim vigorously. Furthermore, the Company does not believe that a loss is either probable or reasonably estimable and has not recorded a loss contingency for these matters.

Delaware DBCP Cases

Abad Castillo and Marquinez. On or about May 31, 2012, two cases (captioned Abad Castillo and Marquinez) were filed with the United States District Court for the District of Delaware (USDC DE No. 1:12-CV-00695-LPS) involving claims for physical injury arising from alleged exposure to DBCP over the course of the late 1960's through the mid-1980's on behalf of 2,700 banana plantation workers from Costa Rica, Ecuador, Guatemala, and Panama. Defendant Dole brought a motion to dismiss 22 plaintiffs from Abad Castillo on the ground that they were parties in cases that had been filed by HendlerLaw, P.C. in Louisiana. On September 19, 2013, the appeals court granted, in part, and denied, in part, the motion to dismiss, holding that 14 of the 22 plaintiffs should be dismissed. On May 27, 2014, the district court granted Dole's motion to dismiss the matter without prejudice on the ground that the applicable statute of limitations had expired in 1995. Then, on August 5, 2014, the parties stipulated to summary judgment in favor of defendants (on the same ground as the earlier motion) and the court entered judgment in the matter. Plaintiffs were given an opportunity to appeal; however, only 57 of the 2,700 actually entered an appeal. Thus, at this stage, only 57 plaintiffs remain in the action. On or about June 18, 2017, the Third Circuit Court submitted a certified question of law to the Delaware Supreme Court on the question of when the tolling period ended. The Delaware Supreme Court heard oral argument on January 17, 2018 and is expected to issue a ruling within 90 days. During the pendency of this question, these matters will be effectively stayed. At any rate, the Company believes that a loss is neither probable nor reasonably estimable in these matters and has not recorded a loss contingency.

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Hawaiian DBCP Matters

Patrickson, et. al. v. Dole Food Company, et al. In October 1997, AMVAC was served with two complaints in which it was named as a defendant, filed in the Circuit Court, First Circuit, State of Hawai'i and in the Circuit Court of the Second Circuit, State of Hawai'i (two identical suits) entitled Patrickson, et. al. v. Dole Food Company, et. al ("Patrickson Case") alleging damages sustained from injuries (including sterility) to banana workers caused by plaintiffs' exposure to DBCP while applying the product in their native countries. Other named defendants include: Dole Food Company, Shell Oil Company and Dow Chemical Company. After several years of law and motion activity, the court granted judgment in favor of the defendants based upon the statute of limitations on July 28, 2010. On August 24, 2010, the plaintiffs filed a notice of appeal. On October 21, 2015, the Hawai'i Supreme Court granted the appeal and overturned the lower court decision, ruling that the State of Hawai'i now recognizes cross-jurisdictional tolling, that plaintiffs filed their complaint within the applicable statute of limitations and that the matter is to be remanded to the lower court for further adjudication. No discovery has taken place in this matter, and, at this stage in the proceedings, the Company does not believe that a loss is either probable or reasonably estimable and, accordingly, has not recorded a loss contingency for this matter.

Adams v. Dole Food Company et al. On approximately November 23, 2007, AMVAC was served with a suit filed by two former Hawaiian pineapple workers (and their spouses), alleging that they had testicular cancer due to DBCP exposure; the action is captioned Adams v. Dole Food Company et al in the First Circuit for the State of Hawaii. Plaintiff alleges that they were exposed to DBCP between 1971 and 1975. AMVAC denies that any of its product could have been used at the times and locations alleged by these plaintiffs. Following the dismissal of Dole Food Company on the basis of the exclusive remedy of worker's compensation benefits, plaintiffs appealed the dismissal. The court of appeals subsequently remanded the matter to the lower court in February 2014, effectively permitting plaintiffs to amend their complaint to circumvent the workers' compensation bar. There has been no activity in the case since that time. The Company does not believe that a loss is either probable or reasonably estimable and has not recorded a loss contingency for this matter.

B. Other Matters

EPA FIFRA/RCRA Matter. On November 10, 2016, the Company was served with a grand jury subpoena out of the U.S. District Court for the Southern District of Alabama in which the U.S. Department of Justice ("DoJ") sought production of documents relating to the Company's reimportation of depleted Thimet containers from Canada and Australia. The Company has retained defense counsel and has substantially completed the production during the course of which it incurred approximately \$2,350 in legal costs and fees responding to this subpoena. During the third quarter of 2017, the Company received a request from DoJ to interview several individuals who may be knowledgeable of the matter. Those interviews are likely to take place during the second quarter of 2018. At this stage, DoJ has not made clear its intentions with regard to either its theory of the case or potential criminal or civil enforcement. Thus, it is too early to tell whether a loss is probable or reasonably estimable. Accordingly, the Company has not recorded a loss contingency on this matter.

Walker v. AMVAC. On or about April 10, 2017, the Company was served with a summons and complaint that had been filed with the United State District Court for the Eastern District of Tennessee under the caption Larry L. Walker v. AMVAC (as No. 4:17-cv-00017). Plaintiff seeks contract damages, correction of inventorship, accounting and

injunctive relief arising from for the Company's alleged misuse of his confidential information to support a patent application (which was subsequently issued) for a post-harvest corn herbicide that the Company has not commercialized. Plaintiff claims further that he, not the Company, should be identified as the inventor in such application. The Company believes that these claims are without merit and intends to defend vigorously. On May 24, 2017, the Company filed a motion to dismiss this action, or in the alternative, for transfer of venue, on the ground that (i) the complaint fails to state claim upon which relief can be granted, (ii) the contracts cited by plaintiff in his complaint include a forum selection clause requiring that disputes are to be adjudicated in the U.S. District Court for the Central District of California, and (iii) the doctrine of forum non conveniens applies. The District Court in Tennessee has yet to rule on the motion. At this stage in the proceedings, it is too early to determine whether a loss is probable or reasonably estimable; accordingly, the Company has not recorded a loss contingency.

Harold Reed v. AMVAC et al. During January 2017, the Company was served with two Statements of Claim that had been filed on March 29, 2016 with the Court of Queen's Bench of Alberta, Canada (as case numbers 160600211 and 160600237) in which plaintiffs Harold Reed (an applicator) and 819596 Alberta Ltd. dba Jem Holdings (an application equipment rental company) allege physical injury and damage to equipment, respectively, arising from a fire that occurred during an application of the Company's potato sprout inhibitor, SmartBlock, at a potato storage facility in Coaldale, Alberta on April 2, 2014. Plaintiffs allege, among other things, that AMVAC was negligent and failed to warn them of the risks of such application. Reed seeks damages of \$250 for pain and suffering, while Jem Holdings seeks \$60 in lost equipment; both plaintiffs also seek unspecified damages as well. Also during

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January 2017, the Company received notice that four related actions relating to the same incident were filed with the same court: (i) Van Giessen Growers, Inc. v Harold Reed et al (No. 160303906)(in which grower seeks \$400 for loss of potatoes); (ii) James Houweling et al. v. Harold Reed et al. (No. 160104421)(in which equipment owner seeks damages for lost equipment); (iii) Chin Coulee Farms, etc. v. Harold Reed et al. (No. 150600545)(in which owner of potatoes and truck seeks \$530 for loss thereof); and (iv) Houweling Farms v. Harold Reed et al. (No. 15060881)(in which owner of several Quonset huts seeks damages for lost improvements, equipment and business income equal to \$4,300). The Company was subsequently named as cross-defendant in those actions by Reed. During the third quarter of 2017, counsel for the Company filed a Statement of Defence (the Canadian equivalent of an answer), alleging that Reed was negligent in his application of the product and that the other cross-defendants were negligent for using highly flammable insulation and failing to maintain sparking electrical fixtures in the storage units affected by the fire. The Company believes that the claims against it in these matters are without merit and intends to defend them vigorously. At this stage in the proceedings, however, it is too early to determine whether a loss is probable or reasonably estimable; accordingly, the Company has not recorded a loss contingency.

Galvan v. AMVAC In an action entitled Graciela Galvan v. AMVAC filed on April 7, 2014 with the Superior Court for the State of California for the County of Orange (No. 00716103CXC), plaintiff, a former employee, alleges violations of wages and hours requirements under the California Labor Code. The Company completed the deposition of putative class representative and participated in mediation on the matter. In February 2016, the court granted plaintiff's motion for class certification with respect to only one of the seven original claims (namely, that allegedly discretionary bonus payments made to class members during the subject period should have been taken into account when calculating overtime). The Company believes that such bonus payments were discretionary and, as such, were properly excluded from overtime calculations. Nevertheless, in the interest of saving defense costs, the Company engaged in settlement discussions with plaintiff's counsel over the course of several months. During the third quarter of 2016, the Company recorded a loss contingency to cover the estimated amount of settlement. During December 2016, the parties reached agreement on terms of settlement, and, on February 9, 2018, the court gave its final approval to the terms of the class settlement. The settlement was not material to the Company's consolidated financial statements and the Company is to provide the court with a report of administration of the settlement proceeds to the class in August 2018, after which the Company expects that the matter will be dismissed with prejudice.

ITEM 4 MINE SAFETY DISCLOSURES

Not Applicable

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## PART II

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

## Market Information

Effective March 7, 2006, the Company listed its \$0.10 par value common stock ("Common Stock") on the New York Stock Exchange under the ticker symbol AVD. From January 1998 through March 6, 2006, the Common Stock was listed on the American Stock Exchange under the ticker symbol AVD. The Company's Common Stock traded on The NASDAQ Stock Market under the symbol AMGD from March 1987 through January 1998.

The following table sets forth the range of high and low sales prices as reported for the Company's Common Stock for the calendar quarters indicated.

	High	Low
Calendar 2017		
First quarter	\$ 19.35	\$ 14.65
Second quarter	18.80	15.20
Third quarter	23.35	17.10
Fourth quarter	24.00	18.01
Calendar 2016		
First quarter	\$ 17.07	\$ 9.63
Second quarter	17.41	12.60
Third quarter	17.92	14.45
Fourth quarter	20.00	14.20

## Holders

As of February 16, 2018, the number of stockholders of the Company's Common Stock was approximately 4,744, which includes beneficial owners with shares held in brokerage accounts under street name and nominees.

## Dividends

The Company has issued a cash dividend in each of the last twenty-two years dating back to 1996. Cash dividends declared during the past three years are summarized in the table below.

Declaration Date	Distribution Date	Record Date	Dividend	Total
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			Per Share	Paid
December 12, 2017	January 10, 2018	December 27, 2017	\$ 0.015	\$438
September 18, 2017	October 19, 2017	October 5, 2017	0.015	439
June 15, 2017	July 14, 2017	June 30, 2017	0.015	437
March 16, 2017	April 15, 2017	March 31, 2017	0.015	435
Total 2017			\$ 0.060	\$1,749
December 8, 2016	January 6, 2017	December 23, 2016	\$ 0.010	\$289
October 11, 2016	November 11, 2016	October 28, 2016	0.010	289
June 13, 2016	July 12, 2016	June 30, 2016	0.010	289
Total 2016			\$ 0.030	\$867
March 16, 2015	April 17, 2015	April 3, 2015	\$ 0.020	\$572
Total 2015			\$ 0.020	\$572

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Purchases of Equity Securities by the Issuer

None

Securities Authorized for Issuance Under Equity Compensation Plans

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants, and rights	Weighted-average exercise price of outstanding options, warrants, rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved			
by security holders	554,449	\$ 9.60	2,000,579
Total	554,449	\$ 9.60	2,000,579

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Stock Performance Graph

The following graph presents a comparison of the cumulative, five-year total return for the Company, the S&P 500 Stock Index, and a peer group (Specialty Chemical Industry). The graph assumes that the beginning values of the investments in the Company, the S&P 500 Stock Index, and the peer group of companies each was \$100 on December 31, 2012. All calculations assume reinvestment of dividends. Returns over the indicated period should not be considered indicative of future returns.

## AMERICAN VANGUARD CORPORATION

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## ITEM 6 SELECTED FINANCIAL DATA

The selected consolidated financial data set forth below with respect to each of the calendar years in the five-year period ended December 31, 2017, have been derived from the Company's consolidated financial statements and are qualified in their entirety by reference to the more detailed consolidated financial statements and the independent registered public accounting firm's reports thereon, which are included elsewhere in this Report on Form 10-K as of December 31, 2017 and 2016 and for each of the three years in the period ended December 31, 2017. See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	2017	2016	2015	2014	2013
Net sales	\$355,047	\$312,113	\$289,382	\$298,634	\$381,021
Gross profit	\$147,392	\$128,288	\$111,902	\$114,496	\$171,347
Operating income	\$26,794	\$20,540	\$11,524	\$6,710	\$55,735
Income before provision for income taxes and loss on					
equity investments	\$24,853	\$18,917	\$8,962	\$3,644	\$53,834
Net income attributable to American Vanguard	\$20,274	\$12,788	\$6,591	\$4,841	\$34,449
Earnings per common share	\$0.70	\$0.44	\$0.23	\$0.17	\$1.22
Earnings per common share—assuming dilution	\$0.68	\$0.44	\$0.23	\$0.17	\$1.19
Total assets (1)	\$535,592	\$429,956	\$435,270	\$463,590	\$439,917
Working capital (1)	\$128,681	\$130,001	\$139,850	\$197,073	\$132,486
Long-term debt, excluding current installments	\$77,486	\$40,951	\$68,321	\$98,605	\$50,671
Stockholders' equity	\$305,314	\$282,357	\$268,326	\$261,003	\$257,795
Weighted average shares outstanding—basic	29,100	28,859	28,673	28,436	28,301
Weighted average shares outstanding—assuming dilution	29,703	29,394	29,237	28,912	28,899
Dividends per share of common stock	\$0.06	\$0.03	\$0.02	\$0.17	\$0.22

(1) The Company's consolidated balance sheets as of December 31, 2015, 2014, and 2013 reflects certain reclassifications for deferred income taxes and income taxes payables.

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ITEM 7 MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS  
FORWARD-LOOKING STATEMENTS/RISK FACTORS:

The Company, from time-to-time, may discuss forward-looking statements including assumptions concerning the Company's operations, future results and prospects. Generally, "may," "could," "will," "would," "expect," "believe," "estimate," "anticipate," "intend," "continue" and similar words identify forward-looking statements. Forward-looking statements appearing in this Report are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on our current expectations and are subject to risks and uncertainties that can cause actual results and events to differ materially from those set forth in or implied by the forward-looking statements and related assumptions contained in the entire Report. Such factors include, but are not limited to: product demand and market acceptance risks; the effect of economic conditions; weather conditions; changes in regulatory policy; the impact of competitive products and pricing; changes in foreign exchange rates; product development and commercialization difficulties; capacity and supply constraints or difficulties; availability of capital resources; general business regulations, including taxes and other risks as detailed from time-to-time in the Company's reports and filings filed with the U.S. SEC. It is not possible to foresee or identify all such factors. We urge you to consider these factors carefully in evaluating the forward-looking statements contained in this Report.

MANAGEMENT OVERVIEW

The Company's operating results in 2017 were improved over those of 2016, with net sales up 14% (\$355,047 compared to \$312,113, year over year), net income attributable to American Vanguard up 58% (\$20,274 v. \$12,788), gross profit up about 15% (\$147,392 v. \$128,288), gross margin slightly up to 42% of net sales and operating expenses up about 12% (\$120,598 v. \$107,748), but down as a percentage of sales to 34% in 2017 as compared to 35% in 2016.

Top line sales performance was driven in part by growth of certain existing product lines, particularly domestic cotton products (in light of increase cotton acreage and pest pressure) and vector control products (following heightened hurricane activity), and the addition of new sales from the four acquisitions that the Company completed largely in the second half of 2017. Gross profit increased as a result of continued improvement in factory performance, organic growth in the Company's sales and the addition of products and businesses acquired during 2017. Operating expenses rose on an absolute basis, as the Company continued to invest in the maintenance of registrations of several important products, professional fees related to acquisitions, continued development of our SIMPAS precision application technology and litigation related to the DoJ proceedings against us, but dropped as a percentage of sales. Due to our acquisition activities, our borrowings increased in 2017 as compared to 2016. As a result, net interest expense was \$1,941 in 2017, as compared to \$1,623 in 2016. Our provision for income taxes included a one-time benefit of \$3,433 in connection with the enactment of the Tax Cuts and Jobs Act ("Tax Reform Act") on December 22, 2017. Our effective tax rate decreased to 18% in 2017, as compared to 30% in 2016. Net income increased to \$0.68 per diluted share (\$0.70 per basic share), as compared to \$0.44 per diluted (and basic) share in 2016.

When considering the consolidated balance sheet, long-term debt increased by \$36,535 to \$77,486 at December 31, 2017, as compared to \$40,951 this time last year. The increased level of debt was driven by four acquisitions completed during the financial year and particularly in the final quarter of the year. Notwithstanding the increase in

long term debt, the Company's borrowing capacity increased to \$139,241 as of December 31, 2017 as compared to \$104,853 at the same time in 2016, and inventory, including goods purchased with our acquisitions, increased only slightly (\$123,124 v. \$120,576) at year-end.

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## Results of Operations

2017 Compared with 2016:

	2017	2016	\$ Change	% Change	
Net sales:					
Insecticides	\$132,137	\$119,226	\$12,911	11	%
Herbicides/soil fumigants/fungicides	121,581	123,540	(1,959)	-2	%
Other, including plant growth regulators	47,691	29,438	18,253	62	%
Total crop	301,409	272,204	29,205	11	%
Non-crop	53,638	39,909	13,729	34	%
Total net sales	\$355,047	\$312,113	\$42,934	14	%
Cost of sales:					
Insecticides	\$84,008	\$78,945	\$5,063	6	%
Herbicides/soil fumigants/fungicides	67,558	66,299	1,259	2	%
Other, including plant growth regulators	31,951	19,139	12,812	67	%
Total crop	183,517	164,383	19,134	12	%
Non-crop	24,138	19,442	4,696	24	%
Total cost of sales	\$207,655	\$183,825	\$23,830	13	%
Gross profit:					
Insecticides	\$48,129	\$40,281	\$7,848	19	%
Herbicides/soil fumigants/fungicides	54,023	57,241	(3,218)	-6	%
Other, including plant growth regulators	15,740	10,299	5,441	53	%
Gross profit crop	117,892	107,821	10,071	9	%
Gross profit non-crop	29,500	20,467	9,033	44	%
Total gross profit	\$147,392	\$128,288	\$19,104	15	%
Gross margin crop	39	%	40	%	
Gross margin non-crop	55	%	51	%	
Total gross margin	42	%	41	%	
Net sales:					
U.S	\$256,142	\$228,854	\$27,288	12	%
International	98,905	83,259	15,646	19	%
Total net sales	\$355,047	\$312,113	\$42,934	14	%

Following is a more detailed discussion of our sales performance by category. Domestic sales finished the year at \$256,142, as compared to \$228,854 in 2016, an increase of 12%. Sales were positively impacted by strong growth in our US cotton products Bidrin® and Folex®; a stable Midwest corn soil insecticide market where procurement in the distribution channel appears to have normalized; hurricane-driven demand for our superior mosquito adulticide, Dibrom®; and \$21,978 in incremental sales of newly acquired products and businesses primarily in the second half of

the year. Offsetting these increases, we experienced significant competitive pricing pressure in the US post-emergent corn herbicide market for our product Impact®, and slightly lower annual sales from our soil fumigant products mainly driven by wet weather in the early part of the year in the western states.

International sales increased 19% year-over year (\$98,905 in 2017 as compared to \$83,259 in 2016), driven by increased sales associated with the key AgriCenter acquisition, made in October 2017, strong tolling revenues, and increased sales of Counter and Aztec. These gains were offset by slower sales of our Mocap® and Nemacur® insecticides.

The relative sales performance of our crop and non-crop businesses is as follows: Net sales of our crop business in 2017 were \$301,409, which constitutes an increase of 11% as compared to net sales of \$272,204 in 2016. Net sales of our non-crop products in 2017 were \$53,638, which is an increase of approximately 34% as compared to \$39,909 in 2016. A more detailed discussion of product groups and products having an effect on net sales for each of the crop and non-crop businesses appears below.

In our crop business, net sales of insecticides in 2017 ended at \$132,137, which was an 11% increase as compared to sales of \$119,226 in 2016. For the same period, annual net sales of our granular soil insecticides were up 8% above 2016. We saw increased



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year-over-year sales from our Thimet® used in peanuts, sugar cane and potatoes, along with increased domestic sales of our cotton foliar insecticide, Bidrin®. We saw modest sales increases in our domestic corn soil insecticides Aztec®, SmartChoice® and Counter® offset by some modest sales declines in our international sales of Mocap® and Nema-cur®. We also benefitted from the mid-year acquisition of abamectin which added net sales of approximately \$2,000 to our results. In general, our overall agricultural insecticide business showed a solid performance in 2017.

Within the product group of herbicides/soil fumigants/fungicides, our crop net sales in 2017 ended at \$121,581, as compared to \$123,540 in 2016. Our fumigant product line continued to perform well despite a slight year-over-year decline in revenue caused by wet weather in both the Western and Southeastern regions of the US which inhibited some on-ground application of this liquid product. In the midwest, we experienced an intensely competitive environment during the year in the post-emergent corn herbicide market and sales of our Impact® herbicide declined when compared to the prior year. This performance was substantially offset by strong performances of both our newly acquired paraquat herbicide and our chlorothalonil fungicide. These products were acquired in mid-year and contributed over \$14,000 to this category.

Within our other product group (which includes plant growth regulators, molluscicides and third party manufacturing activity) we experienced an increase of 62% in net sales, ending at \$47,691 in 2017, as compared to \$29,438 in 2016. The main drivers of this performance were stronger year-over-year sales of our cotton defoliant Folex® due to the 20% increase in U.S. cotton acreage in 2017 as compared to the prior year, an increase in toll manufacturing activity, and the inclusion of sales in Latin America by our newly acquired AgriCenter business.

Within our non-crop business, 2017 net sales increased by 34% to \$53,638 as compared to \$39,909 in 2016. The sales increase resulted from sales in the last three months of the year following the acquisition of OHP, our new niche horticultural distribution business. In addition, our core non crop product portfolio had a very solid year led by naled sales (our Dibrom® brand mosquito adulticide) which rose 69% in 2017, as a result of the intense hurricane season, headlined by the persistent torrential rains of Harvey over the eastern Texas coastal region. In response to the emergency, AMVAC ramped up production significantly, FEMA utilized all available Dibrom inventories (both from the Company and in the market) and the resulting mosquito control operation was successful. We also recorded a 92% increase in our PCNB product sales as we continue to build our market position, an 18% increase in our Pest Strip® products, and modest increases in several of our other commercial pest control products. This performance was offset by the short-term decline in our pharmaceutical products arising from customers having ordered additional product in 2016 in light of uncertain supply conditions.

Our cost of sales for 2017 was \$207,655 or 58% of sales. This compared to \$183,825 or 58% of sales for 2016. The Company aggregates a number of key variable, semi-variable and fixed cost components within reported cost of sales. The raw materials element of our cost of sales remained approximately flat as compared to last year. During the year, our Impact product line endured increased competition resulting in some weakening of market price and accordingly, increased cost of sales when compared to sales revenue as a result. Furthermore, the distribution businesses acquired in the final quarter performed well and added to net sales, as indicated above. In general terms the cost of sales related to distribution activities tends to be higher than those of our core business portfolio because those businesses are selling fully marked up third party products while the Company's core portfolio benefits from the upstream manufacturing activity. Our manufacturing performance for the year was strong and in-line with our targets; specifically, our factory underabsorption costs dropped to \$12,865 or 3.6% of net sales in 2017 as compared to

\$17,739 or 5.7% of net sales in 2016.

Gross profit for 2017 improved by \$19,104 or 15% to end at \$147,392 for the year ended December 31, 2017, as compared to \$128,288 for the prior year. Gross margin as a percent of net sales, however, was 42% for 2017 as compared to 41% in 2016. While the Company experienced continuous improvement in factory performance and factory cost recovery and strong performance on raw material purchasing, these benefits were offset by competitive pricing pressure in the Midwest herbicide market and a larger volume of lower-margin sales through newly acquired distribution businesses.

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Operating expenses in 2017 increased by \$12,850 to \$120,598 or 34% of sales as compared to \$107,748 or 35% in 2016. The differences in operating expenses by department are as follows:

	2017	2016	Change	% Change	
Selling	\$29,112	\$27,442	\$1,670	6	%
General and administrative	37,660	32,128	5,532	17	%
Research, product development and regulatory	26,076	21,298	4,778	22	%
Freight, delivery and warehousing	27,750	26,880	870	3	%
	\$120,598	\$107,748	\$12,850	12	%

Selling expenses increased by \$1,670 to \$29,112 for the year ended December 31, 2017, as compared to \$27,442 in 2016. The main drivers for the increased expenses are expanded activities in both international and domestic sales operations resulting from acquisitions. However, selling expenses as a percent of net sales actually decreased from 8.8% in 2016 to 8.2% in 2017.

- General and administrative expenses increased by \$5,532 to \$37,660 for the year ended December 31, 2017, as compared to \$32,128 in 2016. The main drivers for the increase are driven by an increase in legal expenses related to the DoJ proceedings against the Company of approximately \$1,200, expenses of \$1,821 incurred in professional fees in connection with the product and business acquisitions completed in 2017 including; the expense of the acquisition process, increased amortization expenses as a result of the valuation of the acquisitions, and the administrative operating expenses of such acquisitions from the closing date of the respective acquisitions.

Research, product development and regulatory expenses increased by \$4,778 to \$26,076 for the year ended December 31, 2017, as compared to \$21,298 in 2016. The increase is driven by additional regulatory activity defending our expanded portfolio of products, product development studies, driven by our expanded portfolio and continued progress on the development of our SIMPAS technology.

Freight, delivery and warehousing costs for the year ended December 31, 2017 increased by \$870 to \$27,750, as compared to \$26,880 in 2016. When expressed as a percentage of sales, freight costs decreased slightly year over year to 7.8% in 2017, as compared to 8.6% in 2016. This is mainly due to product mix and locations of customers. Net interest expense was \$1,941 in 2017, as compared to \$1,623 in 2016. Interest costs are summarized in the following table:

	2017			2016		
	Average Debt	Interest Expense	Interest Rate	Average Debt	Interest Expense	Interest Rate
Average Indebtedness and Interest expense	Debt	Expense	Rate	Debt	Expense	Rate
Working capital revolver	\$51,103	\$ 1,547	3.0 %	\$59,897	\$ 1,382	2.3 %
Notes payable	—	—	—	20	1	5.0 %

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Interest income	—	(41 )	—	—	(7 )	—	
Amortization of debt issuance costs	—	293	—	—	250	—	
Amortization of other deferred liabilities	—	82	—	—	37	—	
Other interest expense	—	143	—	—	44	—	
Subtotal	51,103	2,024	4.0 %	59,917	1,707	2.8 %	
Capitalized interest	—	(83 )	—	—	(84 )	—	
Total	\$51,103	\$ 1,941	3.8 %	\$59,917	\$ 1,623	2.7 %	

The Company's average overall debt for the year ended December 31, 2017 was \$51,103 as compared to \$59,917 for the year ended December 31, 2016. On a gross basis, our effective interest rate increased on our working capital revolver to 3.0%, as compared to 2.3% in 2016. This increase was driven by increases in the LIBOR rate. After adjustments related to capitalized interest and including expenses related to the amortization of deferred liabilities, the overall effective rate was 3.8% for 2017 as compared to 2.7% in 2016.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Tax Reform Act") was signed into law. The legislation significantly changes U.S. tax law by, among other things, lowering corporate income tax rates, implementing a territorial tax system and imposing a tax on deemed repatriated earnings of foreign subsidiaries. The Tax Reform Act reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018. As a result of the reduction in the U.S. corporate income tax rate, we

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revalued our ending net deferred tax assets and liabilities at December 31, 2017, provisionally resulting in a deferred tax benefit of \$4,683 that is included in the provision for income taxes for the year ended December 31, 2017. The Tax Reform Act also provided for a one-time deemed mandatory repatriation of Post-1986 undistributed foreign subsidiary earnings and profits (“E&P”) through the year ended December 31, 2017. We have performed a review of our foreign entities and have estimated that the amount of deemed repatriated income amounts to \$30,085, on which the Company has estimated that there will be a tax expense of \$1,250. That amount is also included in the provision for income taxes for the year ended December 31, 2017. The net tax benefits from the Tax Reform Act are reflected in our financial results in accordance with Staff Accounting Bulletin No. 118 (SAB 118), which was issued to address the application of US GAAP in situations when the registrant does not have the necessary information available, prepared or analyzed (including computation) in reasonable detail to complete the accounting for uncertain income tax effects of the Tax Reform Act. Additional work is necessary for a more detailed analysis of our deferred tax assets and liabilities and of the impact of the deemed repatriation. Any subsequent adjustment to these amounts will be recorded to income tax expense in the quarter of 2018 when the analysis is complete.

Our provision for income taxes for 2017 was \$4,443, as compared to \$5,540 for 2016. The effective tax rate for 2017 was 18%, as compared to 30% in 2016. The decrease in the effective tax rate was primarily driven by the inclusion of the one-time net tax benefit associated with the Tax Reform Act enacted on December 22, 2017, in the amount of \$3,433. The decrease is partially offset by lower percentage of earnings in jurisdictions with lower income tax rate.

The Company has effectively settled its examination with the Internal Revenue Service (“IRS”) for the tax years ended December 31, 2012 through 2014. The Company’s 2015 and 2016 federal income tax returns are still subject to IRS examination. The Company has other state and foreign income tax returns subject to examination.

For the year ended December 31, 2017, the Company recorded losses on its equity investment of \$49. For the same period of 2016, the Company recorded losses on its equity investment of \$353. In 2017, our net income was reduced by \$87, as compared to \$236 in 2016, representing the share of net income of our majority owned subsidiary that was charged to the non-controlling interest.

Net income attributable to American Vanguard ended at \$20,274 or \$0.68 per diluted share in 2017 as compared to \$12,788 or \$0.44 per diluted share in 2016.

#### Liquidity and Capital Resources

The Company generated \$59,001 of cash from operating activities provided during the year ended December 31, 2017, as compared to \$46,406 in the prior year. Included in the \$59,001 are net income of \$20,361, plus non-cash depreciation, amortization of intangibles and other assets and discounted future liabilities, in the amount of \$22,290. Stock based compensation of \$4,714, loss from equity method investment of \$49 and change in value of deferred income taxes of \$398, provided net cash inflows of \$47,812, as compared to \$37,843 for the same period of 2016.

During 2017 the Company generated \$11,189 from reducing working capital, as compared to generating \$8,563 during 2016. This change excluded increases in working capital related to the products and businesses acquired during 2017. Included in this change; inventories reduced by \$16,183 as a result of consistent efforts from our sales,

inventory and operations planning team to balance manufacturing cost recovery, plant capacity and customer needs. Deferred revenue as of December 31, 2017 increased by \$10,726, as compared to December 31, 2016 primarily as a result of customer decisions to make early payments in return for early cash incentive programs. Our accounts payable balances increased by \$3,322 driven by increased manufacturing activity and capital spending in the final quarter of the year. In addition accounts receivables and prepaid expenses reduced by \$754 and \$647 respectively. Offsetting these positive changes, the Company made payments to the IRS following the concluding of the 2012 to 2014 audit in the amount of \$12,073 and accrued programs reduced year-on-year by \$4,529. Finally other payables decreased by \$3,841.

With regard to program accrual, these reduced as noted above, primarily reflecting our mix of sales and customers in 2017 as compared to the prior year. The Company accrues programs in line with the growing season upon which specific products are targeted. Typically crop products have a growing season that ends on September 30<sup>th</sup> of each year. During 2017, the Company made accruals for programs in the amount of \$59,806 and made payments in the amount of \$63,682. During the prior year, the Company made accruals in the amount of \$70,448 and made payments in the amount of \$71,889.

In 2016, inventory reduced by \$15,901, accounts payables increased by \$9,015, other payables increased by \$4,631 and income tax receivable reduced by \$1,186. Offsetting these positive changes, accounts receivables increased by \$11,817, prepaid expenses increased by \$3,872, deferred revenues decreased by \$5,040 and program costs by \$1,441.

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Cash used for investing activities was \$89,512 for the year ended December 31, 2017 as compared to \$14,137 in 2016. The Company spent \$81,896 in business acquisitions including intangible assets, goodwill, working capital and fixed assets. In addition, \$6,666 was spent on fixed assets primarily focused on continuing to invest in manufacturing infrastructure and \$950 on an investment.

During the year ended December 31, 2017 financing activities provided \$33,935, principally from the borrowings on the Company's senior credit facility, as compared to utilizing \$28,545 for the year ended December 31, 2016. This included a net borrowing of \$37,025 from our credit facility in 2017, as compared to a net repayment of \$27,600 in 2016. We paid \$751 in debt issuance costs related to the amendment of our credit facility. In 2017, we paid dividends to stockholders amounting to \$1,600, as compared to \$578 in 2016.

The Company has various loans in place that together constitute the long-term loan balances shown in the consolidated balance sheets as at December 31, 2017 and 2016. These are summarized in the following table:

Indebtedness \$000's	2017	2016
	Long-term	Long-term
Revolving line of credit	\$ 78,425	\$ 41,400
Debt issuance costs	(939 )	(449 )
Total indebtedness	\$ 77,486	\$ 40,951

The Company's main bank is Bank of the West, a wholly-owned subsidiary of the French bank, BNP Paribas. Bank of the West has been the Company's bank for more than 30 years and is the syndication manager for the Company's loans.

As of June 30, 2017, AMVAC Chemical Corporation ("AMVAC"), the Company's principal operating subsidiary, as borrower, and affiliates (including the Company, AMVAC CV and AMVAC BV), as guarantors and/or borrowers, entered into a Third Amendment to Second Amended and Restated Credit Agreement (the "Credit Agreement") with a group of commercial lenders led by Bank of the West as agent, swing line lender and Letter of Credit ("L/C") issuer. The Credit Agreement is a senior secured lending facility, consisting of a line of credit of up to \$250,000, an accordion feature of up to \$100,000 and a maturity date of June 30, 2022. The Credit Agreement contains two key financial covenants; namely, borrowers are required to maintain a Consolidated Funded Debt Ratio of no more than 3.25-to-1 and a Consolidated Fixed Charge Covenant Ratio of at least 1.25-to-1. The Company's borrowing capacity varies with its financial performance, measured in terms of EBITDA as defined in the Credit Agreement, for the trailing twelve month period. Under the Credit Agreement, revolving loans bear interest at a variable rate based, at borrower's election with proper notice, on either (i) LIBOR plus the "Applicable Rate" which is based upon the Consolidated Funded Debt Ratio ("Eurocurrency Rate Loan") or (ii) the greater of (x) the Prime Rate, (y) the Federal Funds Rate plus 0.5%, and (z) the Daily One-Month LIBOR Rate plus 1.00%, plus, in the case of (x), (y) or (z) the Applicable Rate ("Alternate Base Rate Loan"). Interest payments for Eurocurrency Rate Loans are payable on the last day of each interest period (either one, two, three or six months, as selected by the borrower) and the maturity date, while interest payments for Alternate Base Rate Loans are payable on the last business day of each month and the maturity date.

At December 31, 2017, according to the terms of the Credit Agreement and based on our performance against the most restrictive covenants listed above, the Company had the capacity to increase its borrowings by up to \$139,241. This compares to an available borrowing capacity of \$104,853 as of December 31, 2016. The level of borrowing capacity is driven by three factors: (1) our financial performance, as measured in EBITDA for trailing twelve month period, which has improved, (2) the inclusion of proforma EBITDA related to acquisitions completed during 2017 and (3) the leverage covenant (being the number of times EBITDA the Company may borrow under its credit facility agreement). The Company was in compliance with all the debt covenants as of December 31, 2017.

#### Contractual Obligations and Off-Balance Sheet Arrangements

We believe that the combination of our cash flows from operations, current cash on hand and the availability under the Company's credit facility will be sufficient to meet our working capital and capital expenditure requirements and will provide us with adequate liquidity to meet our anticipated operating needs for at least the next 12 months. Although operating activities are expected to provide cash, to the extent of growth in the future, our operating and investing activities will use cash and, consequently, this growth may require us to access some or all of the availability under the credit facility. It is also possible that additional sources of finance may be necessary to support additional growth.



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The following summarizes our contractual obligations at December 31, 2017, and the effects such obligations are expected to have on cash flows in future periods:

	Payments Due by Period				After 5 Years
	Total	Less than 1 Year	1—3 Years	4—5 Years	
Long-term debt	\$78,425	\$—	\$—	\$78,425	\$—
Estimated interest liability (1)	8,118	1,804	3,608	2,706	—
Licensing obligations	589	127	240	222	—
Deferred earn outs on business acquisitions	10,741	5,263	5,478	—	—
Employment agreements	2,427	896	1,531	—	—
Operating leases—rental properties	6,762	1,520	2,984	1,608	650
Operating leases—vehicles	1,361	730	615	16	—
Transition taxes (2)	1,250	100	200	200	750
	\$109,673	\$10,440	\$14,656	\$83,177	\$1,400

(1) Estimated interest liability has been calculated using the current effective rate for each category of debt over the remaining term of the debt and taking into account scheduled repayments. The revolving line has been assumed to be constant (i.e. \$78,425) throughout the remaining term. All of our debt is linked to LIBOR rates.

There were no other off-balance sheet arrangements as of December 31, 2017.

Under the terms of the credit facility, all debt outstanding is due when the agreement expires on June 30, 2022.

In addition to the above contractual obligations, \$2,118 of unrecognized tax benefits and \$2,257 of accrued penalties and interest have been recorded as long term liabilities as of December 31, 2017. We are uncertain as to if or when such amounts may be settled or any tax benefits may be realized.

(2) The Company elected to pay the transition tax in an eight-year period.

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## Results of Operations

2016 Compared with 2015:

	2016	2015	\$ Change	% Change	
Net sales:					
Insecticides	\$119,226	\$117,180	\$2,046	2	%
Herbicides/soil fumigants/fungicides	123,540	111,897	11,643	10	%
Other, including plant growth regulators	29,438	29,013	425	1	%
Total crop	272,204	258,090	14,114	5	%
Non-crop	39,909	31,292	8,617	28	%
Total net sales	\$312,113	\$289,382	\$22,731	8	%
Cost of sales:					
Insecticides	\$78,945	\$77,288	\$1,657	2	%
Herbicides/soil fumigants/fungicides	66,299	65,507	792	1	%
Other, including plant growth regulators	19,139	18,097	1,042	6	%
Total crop	164,383	160,892	3,491	2	%
Non-crop	19,442	16,588	2,854	17	%
Total cost of sales	\$183,825	\$177,480	\$6,345	4	%
Gross profit:					
Insecticides	\$40,281	\$39,892	\$389	1	%
Herbicides/soil fumigants/fungicides	57,241	46,390	10,851	23	%
Other, including plant growth regulators	10,299	10,916	(617 )	-6	%
Gross profit crop	107,821	97,198	10,623	11	%
Gross profit non-crop	20,467	14,704	5,763	39	%
Total gross profit	\$128,288	\$111,902	\$16,386	15	%
Gross margin crop	40	% 38	%		
Gross margin non-crop	51	% 46	%		
Total gross margin	41	% 39	%		
Net sales:					
U.S	\$228,854	\$212,087	\$16,767	8	%
International	83,259	77,295	5,964	8	%
Total net sales	\$312,113	\$289,382	\$22,731	8	%

Net sales in 2016 increased by approximately 8%, as compared to the prior year. This is largely attributable to lower sales of our cotton insecticide caused by fewer planted acres in several key selling geographies and lighter foliar pest pressure. We experienced another year of solid performance from our soil fumigant products, which are used in the potato and various vegetable/fruit markets. Sales also benefited from the introduction of several new High Concentration (HC) soil insecticides, and from increased international sales of our insecticides Mocap<sup>®</sup> and

Nemacur® along with first year sales of our recently acquired bromacil herbicide products.

Our international business continued to perform well during the twelve months ended December 31, 2016 with net sales of \$83,259 which was a 8% improvement over the prior year. Sales benefited from our April, 2015 acquisition of two product lines – European Nemacur® purchased from Adama and the Hyvar/Krovar (bromacil) products purchased from DuPont. In 2015, the Company recorded stronger sales in Mexico and the Asian market, somewhat lower sales in Europe and Canada, and relatively flat sales in other geographic regions.

In the Midwest corn market, distributors and retailers continued to work down inventories of many crop protection products and growers remained cautious regarding input purchases due to the low corn commodity price. During the year, we have seen excess inventories decline significantly and corn commodity price stabilize, both of which should provide a basis for more normal buying patterns to resume. Despite conservative procurement described above and continued reduced insect pressure as a result of two years of harsh winter weather, the Company's 2015 sales of insecticide and herbicide products for corn remained essentially flat with the prior year.

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The Company's total net sales for the year ended December 31, 2016 were up 8% to \$312,113, as compared to \$289,382 for the year ended December 31, 2015. Net sales of our crop business in 2016 were \$272,204, which constitutes an increase of nearly 5% as compared to net sales of \$258,090 for that business in 2015. Net sales of our non-crop products in 2016 were \$39,909, which is an increase of approximately 28% as compared to \$31,292 in 2015. A more detailed discussion of product groups and products having a material effect on net sales for each of the crop and non-crop businesses appears below.

In our Crop business, net sales of insecticides in 2016 ended at \$119,226, which was a 2% increase as compared to \$117,180 in 2015. For the same period, annual net sales of our granular soil insecticides were up 4% from 2015, primarily driven by reduced equipment sales, while sales of our corn soil insecticides remained relatively flat. We had increased year-over-year performance from our Nemacur<sup>®</sup> and Mocap<sup>®</sup> products in international markets offset by a decline in domestic Thimet<sup>®</sup> sales due to seasonally delayed purchasing which are likely to shift to later in the 2016-2017 season. Among our non-granular insecticide products for crop applications, net sales of our cotton foliar insecticide Bidrin<sup>®</sup> were down due to fewer planted acres in several prime/high usage areas of the Southeast region and lighter pest pressure.

Within the product group of herbicides/soil fumigants/fungicides, our crop net sales in 2016 were up 10% to \$123,540 as compared to \$111,897 in 2015. Our fumigant product line continued to perform well. Midwest restocking demand for our post-emergent corn herbicide Impact resulted in increased sales and the addition of newly acquired bromacil products Hyvar<sup>®</sup> and Krovar<sup>®</sup> contributed to an overall increase in our herbicide category. Within this group, fungicides were essentially flat with the prior year.

Within our other products group (which includes plant growth regulators, molluscicides and third party manufacturing activity), we experienced an increase of approximately 1% in net sales, ending at \$29,438 in 2016, as compared to \$29,013 in 2015. The major drivers of this performance were flat year-over-year sales of our cotton defoliant Folex<sup>®</sup>; a decline in our specialty fruit product NAA<sup>®</sup> and toll manufacturing; offset by an increase in sales of our potato sprout inhibitor SmartBlock<sup>®</sup> and our molluscicide Metaldehyde.

Within our non-crop business, 2016 net sales increased by 28% to \$39,909 as compared to \$31,292 recorded in 2015. Naled sales (our Dibrom<sup>®</sup> brand mosquito adulticide) rose 8% in 2016, and we saw slight increases in several of our products that have faced generic competition. Offsetting those gains, we posted either flat or lower year-over-year sales in our consumer bug/insect sprays, pest strips and pharmaceutical product lines.

Our cost of sales for 2016 was \$183,825 or 59% of net sales. This compared to \$177,480 or 61% of net sales for 2015. The decrease in cost of sales as a percentage of net sales in 2016 was driven primarily as a result of reduced factory costs, which reduced cost of sales by approximately 2.4%. This was partially offset by inflation in raw material prices, which on average amounted to an increase in cost of sales approximately  $\frac{3}{4}$  of one percent. Together these factors resulted in the reduction in cost of sales by 1%.

Gross profit for 2016 increased by \$16,386 to end at \$128,288 for the year ended December 31, 2016, as compared to \$111,902 for the prior year. Gross margin percentage for 2016 improved by 2% and ended at 41%, as compared to 39% for 2015. The improvement was driven by improved factory cost recovery.

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Operating expenses in 2016 increased by \$7,370 to \$107,748 or 34.5% of sales as compared to \$100,378 or 34% in 2015. The differences in operating expenses by department are as follows:

	2016	2015	Change	Change	
Selling	\$27,442	\$27,052	\$ 390	1	%
General and administrative	32,128	28,516	3,612	13	%
Research, product development and regulatory	21,298	19,116	2,182	11	%
Freight, delivery and warehousing	26,880	25,694	1,186	5	%
	\$107,748	\$100,378	\$ 7,370	7	%

Selling expenses increased by \$390 to end at \$27,442 for the year ended December 31, 2016, as compared to \$27,052 in 2015. The main drivers for the decrease are cost reduction actions in our advertising and marketing efforts and reductions in costs associated with both international and domestic field sales operations.

General and administrative expenses increased by \$3,612 to \$32,128 for the year ended December 31, 2016, as compared to \$28,516 in 2015. The main drivers for the increase are primarily due to increase in legal expense, amortization expense from the product line acquisitions completed during the early part of 2016 and incentive compensation costs.

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Research, product development and regulatory expenses increased by \$2,182 to \$21,298 for the year ended December 31, 2016, as compared to \$19,116 in 2015. This was driven by timing of product defense studies and from the benefits of the consolidation of two industry wide task force groups.

Freight, delivery and warehousing costs for the year ended December 31, 2016 increased by \$1,186 to \$26,880, as compared to \$25,694 in 2015. As a percentage of sales, freight costs reduced slightly year over year, at 8.6% in 2016, as compared to 8.9% in 2015.

Net interest expense was \$1,623 in 2016, as compared to \$2,562 in 2015. Interest costs are summarized in the following table:

	2016			2015		
	Average Debt	Interest Expense	Interest Rate	Average Debt	Interest Expense	Interest Rate
Average Indebtedness and Interest expense						
Working capital revolver	\$59,897	\$ 1,382	2.3 %	\$94,765	\$ 2,027	2.1 %
Notes payable	20	1	5.0 %	6,809	266	3.9 %
Interest Income	—	(7 )	—	—	—	—
Amortization of debt issuance costs	—	250	—	—	291	—
Amortization of other deferred liabilities	—	37	—	—	135	—
Other interest expense	—	44	—	—	53	—
Subtotal	\$59,917	\$ 1,707	2.8 %	\$101,574	\$ 2,772	2.7 %
Capitalized interest	—	(84 )	—	—	(210 )	—
Total	\$59,917	\$ 1,623	2.7 %	\$101,574	\$ 2,562	2.5 %

The Company's average overall debt for the year ended December 31, 2016 was \$59,917 as compared to \$101,574 for the comparable period of the previous year. As can be seen from the above table, on a gross basis, the effective interest rate on our working capital revolver decreased to 2.3%, as compared to 2.1% in 2015, due to lower interest rates on our new senior credit facility agreement and the absence of a fixed rate swap. After adjustments related to capitalized interest and including expenses related to the amortization of deferred liabilities, the overall effective rate was 2.7% for 2016 as compared to 2.5% in 2015. Reduction in deferred liabilities related to product line acquisitions contributed to the reduction in our effective interest rate in 2016.

Income tax expense for 2016 was \$5,540, as compared to a tax expense of \$2,009 for 2015. The effective tax rate for 2016 was 30%, as compared to 23% in 2015. The increase in the effective tax rate was driven by additional income generated in the U.S. as compared to the previous year. The ratio of domestic to foreign income has a material impact on the Company's overall effective tax rate.

For the year ended December 31, 2016, the Company recorded losses on its equity investment of \$353. For the same period of 2015, the Company recorded losses on its equity investment of \$629 and a loss on dilution in the amount of \$7, for a total loss of \$636 on its equity method investment. In 2016, our net income was reduced by \$236, representing the share of net income of our majority owned subsidiary that was allocated to the non-controlling

interest. In 2015, a net loss of \$274 was allocated to the non-controlling interest share.

Net income attributable to American Vanguard ended at \$12,788 or \$0.44 per diluted share in 2016 as compared to \$6,591 or \$.23 per diluted share in 2015.

#### Recently Issued Accounting Guidance

Please refer to Notes of Consolidated Financial Statements – Description of Business, Basis of Consolidation, Basis of Presentation and Significant Accounting Policies in the accompanying Notes to the Consolidated Financial Statements for recently issued and adopted accounting standards.

#### Foreign Exchange

Management does not believe that the fluctuation in the value of the dollar in relation to the currencies of its customers in the last two fiscal years has adversely affected the Company's ability to sell products at agreed upon prices denominated in U.S. dollars, where applicable. No assurance can be given, however, that adverse currency exchange rate fluctuations will not occur in the future.

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Should adverse currency exchange rate fluctuations occur in geographies where the Company sells/exports its products, management is not certain such fluctuations will or will not materially impact the Company's operating results.

Inflation

Management believes inflation has not had a significant impact on the Company's operations during the past two years. The Company is working diligently with its critical raw material suppliers to control inflationary pressures, conducting contract negotiations with focus on two key market shifts: first, the relatively stable price of oil and natural gas, combined with higher global prices for basic feedstocks like phosphorus, caustic soda, methanol and sulfur have prompted some suppliers to announce price increases to the Company, and second, the Company monitors our international suppliers' for possible currency gains versus the U.S. dollar, and where appropriate uses this knowledge to forestall inflation in raw materials that are purchased in dollar terms. The Company recognizes there is long-term pressure on demand for raw materials in the developing world and is utilizing its expertise to minimize inflationary pressure. The Company has been able to push back on many of the proposed price increases for intermediates that are shipped to our US factories, to either avoid, minimize or forestall them.

CRITICAL ACCOUNTING POLICIES

Certain of the Company's policies require the application of judgment by management in selecting the appropriate assumptions for calculating financial estimates. These judgments are based on historical experience, terms of existing contracts, commonly accepted industry practices and other assumptions that the Company believes are reasonable under the circumstances. These estimates and assumptions are reviewed periodically and the effects of revisions are reflected in the consolidated financial statements in the period that revisions are determined to be necessary. Actual results may differ from these estimates under different outcomes or conditions.

The Company's critical accounting policies and estimates include:

**Principles of Consolidation**—The Company's Consolidated Financial Statements include the accounts of the Company and its subsidiaries. Less than wholly owned subsidiaries, including joint ventures, are consolidated when it is determined that the Company has a controlling financial interest, which is generally determined when the Company holds a majority voting interest. When protective rights, substantive rights or other factors exist, further analysis is performed in order to determine whether or not there is a controlling financial interest. The Consolidated Financial Statements reflect the assets, liabilities, revenues and expenses of consolidated subsidiaries and the non-controlling parties' ownership share is presented as a non-controlling interest. All significant intercompany accounts and transactions are eliminated.

**Revenue Recognition and Allowance for Doubtful Accounts**—Revenue from sales are recognized at the time title and the risks of ownership pass. This is when the customer has made the fixed commitment to purchase the goods, the products are shipped per the customer's instructions, the sales price is fixed and determinable, and collection is reasonably assured. The Company has in place procedures to ensure that revenue is recognized when earned. The procedures are subject to management's review and from time to time certain sales are excluded until it is clear that the title has passed and there is no further recourse to the Company. From time to time, the Company may offer a program



to eligible customers, in good standing, that provides extended payment terms on a portion of the sales on selected products. The Company analyzes these extended payment programs in connection with its revenue recognition policy to ensure all revenue recognition criteria are satisfied at the time of sale. Allowance for doubtful accounts is established based on estimates of losses related to customer receivable balances. Estimates are developed using either standard quantitative measures based on historical losses, adjusted for current economic conditions, or by evaluating specific customer accounts for risk of loss.

**Accrued Program Costs**—In accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 605, the Company classifies certain payments to its customers as a reduction of sales revenues. The Company describes these payments as “Programs”. Programs are a critical part of doing business in the U.S. agricultural chemicals business market place. For accounting purposes, programs are recorded as a reduction in gross sales and include market pricing adjustments, volume take up or other key performance indicator driven payments made to distributors, retailers or growers predominantly at the end of a growing season. Each quarter management compares each sale transaction with program guidelines to determine what program liability has been incurred. Once this initial calculation is made for the specific quarter, sales and marketing management along with executive and financial management review the accumulated program balance and make assessments of whether or not customers are tracking in a manner that indicates that they will meet the requirements set out in the terms and conditions attached to each program. If management believes that customers are falling short of or exceeding their previously anticipated annual goals, then periodic adjustments will be made to the accumulated accrual to properly reflect the Company’s best estimate of the liability at the balance

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sheet date. The majority of adjustments are made at the end of the crop season, at which time customer performance can be fully assessed. Programs are paid out predominantly on an annual basis, usually in the final quarter of the financial year or the first quarter of the following year. The Company recorded accrued programs of \$39,054 at December 31, 2017, as compared to \$42,930 at December 31, 2016.

**Inventories** — The Company values its inventories at lower of cost or net realizable value. Cost is determined by the first-in, first-out (“FIFO”) method, including, as appropriate, material, labor, factory overhead and subcontracting services. The Company writes down and makes adjustments to its inventory net realizable value following assessments of slow moving and obsolete inventory and other annual adjustments to ensure that our standard costs continue to closely reflect manufacturing cost. The Company recorded an inventory reserve allowance of \$3,137 at December 31, 2017, as compared to \$3,594 at December 31, 2016.

**Long-lived Assets**— Long-lived assets primarily consist of the costs of intangible assets and of proprietary returnable packaging assets including Smartbox and Lock and Load containers. The carrying value of long-lived assets is reviewed for impairment quarterly and/or whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. The Company evaluates recoverability of an asset group by comparing the carrying value to the future undiscounted cash flows that it expects to generate from the asset group. If the comparison indicates that the carrying value of an asset group is not recoverable, measurement of the impairment loss is based on the fair value of the asset. There were no circumstances that would indicate any impairment of the carrying value of these long-lived assets and no material impairment losses were recorded in 2017 or 2016.

**Property, Plant and Equipment and Depreciation**— Property, plant and equipment includes the cost of land, buildings, machinery and equipment, office furniture and fixtures, automobiles, construction projects and significant improvements to existing plant and equipment. Interest costs related to significant construction projects are capitalized at the Company’s current weighted average effective interest rate. Expenditures for minor repairs and maintenance are expensed as incurred. When property or equipment is sold or otherwise disposed of, the related cost and accumulated depreciation are removed from the respective accounts and the gain or loss realized on disposition is reflected in earnings. All plant and equipment is depreciated using the straight-line method, utilizing the estimated useful property lives. Once placed into service, building lives range from 10 to 30 years; machinery and equipment lives range from 3 to 15 years. During the years ended December 31, 2017, 2016 and 2015 the Company eliminated from assets and accumulated depreciation \$6,317, \$16,652, and \$549, respectively, of fully depreciated assets.

**Foreign Currency Translation**— Assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, have been translated at period end exchange rates, and profit and loss accounts have been translated using weighted average yearly exchange rates. Adjustments resulting from translation have been recorded in the equity section of the balance sheet as cumulative translation adjustments in other comprehensive income (loss). The effects of foreign currency exchange gains and losses on transactions that are denominated in currencies other than the Company’s functional currency, including transactions denominated in the local currencies of the Company’s international subsidiaries where the functional currency is the U.S. dollar, are remeasured to the functional currency using the end of the period exchange rates. The effects of remeasurement related to foreign currency transactions are included in the consolidated statements of operations.

Goodwill and Other Intangible Assets—The primary identifiable intangible assets of the Company relate to assets associated with its product and business acquisitions. The Company adopted the provisions of ASC 350, under which identifiable intangibles with finite lives are amortized and those with indefinite lives are not amortized. The estimated useful life of an identifiable intangible asset to the Company is based upon a number of factors including the effects of demand, competition, and expected changes in the marketability of the Company’s products. The Company re-evaluates whether these intangible assets are impaired on both a quarterly and an annual basis and anytime when there is a specific indicator for impairment, relying on a number of factors including operating results, business plans and future cash flows. Identifiable intangible assets that are subject to amortization are evaluated for impairment using a process similar to that used to evaluate long-lived assets. The impairment test for identifiable intangible assets not subject to amortization consists of either a qualitative assessment or a comparison of the fair value of the intangible asset with its carrying amount. An impairment loss, if any, is recognized for the amount by which the carrying value exceeds the fair value of the asset. Fair value is typically estimated using a discounted cash flow analysis. When determining future cash flow estimates, the Company considers historical results adjusted to reflect current and anticipated operating conditions. Estimating future cash flows requires significant judgment by the Company, in such areas as: future economic conditions, industry-specific conditions, product pricing and necessary capital expenditures. The use of different assumptions or estimates for future cash flows could produce different impairment amounts (or none at all) for long-lived assets, goodwill and identifiable intangible assets. The Company performed impairment reviews for the years ended December 31, 2017 and 2016 and recorded immaterial impairment losses.

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The Company reviews goodwill for impairment utilizing either a qualitative assessment or a two-step process. If the Company decides that it is appropriate to perform a qualitative assessment and concludes that the fair value of a reporting unit more likely than not exceeds its carrying value, no further evaluation is necessary. If the Company performs the two-step process, the first step of the goodwill impairment test is used to identify potential impairment by comparing the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired and the second step of the impairment test is unnecessary. If the carrying amount of a reporting unit exceeds its fair value, the second step is performed to measure the amount of impairment by comparing the carrying amount of the goodwill to a determination of the implied value of the goodwill. If the carrying amount of goodwill is greater than the implied value, an impairment charge is recognized for the difference. The Company annually tests goodwill for impairment in beginning of the fourth quarter.

Income taxes—Income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect management’s best estimate of current and future taxes to be paid. The Company is subject to income taxes in the United States and numerous foreign jurisdictions. The Company assessed the realizability of deferred tax assets and determined that based on the available evidence, including a history of taxable income and estimates of future taxable income, it is more likely than not that the deferred tax assets will be realized. Significant management judgment is required in determining the provision for income taxes and deferred tax assets and liabilities. In the event that actual results differ from these estimates, we will adjust these estimates in future periods, which may result in a change in the effective tax rate in a future period. Accounting for income taxes involves uncertainty and judgment on how to interpret and apply tax laws and regulations within the Company’s annual tax filings. Such uncertainties from time to time may result in a tax position that may be challenged and overturned by a tax authority in the future which could result in additional tax liability, interest charges and possibly penalties. The Company classifies interest and penalties as a component of income tax expense.

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ITEM 7A QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company is exposed to market risk related to changes in interest rates, primarily from its borrowing activities. The Company's indebtedness to its primary lender is evidenced by a line of credit with a variable rate of interest, which fluctuates with changes in the lender's reference rate (LIBOR). The Company may use derivative financial instruments for trading purposes to protect trading performance from exchange rate fluctuations on material contracts, though there are no such instruments in place during any periods presented in this Annual Report.

The Company conducts business in various foreign currencies, primarily when doing business in Europe, Mexico, Central and South America. Therefore changes in the value of the currencies of such countries or regions affect the Company's financial position and cash flows when translated into U.S. Dollars. The Company has mitigated, and will continue to mitigate, a portion of its currency exchange exposure through natural hedges based on the operation of decentralized foreign operating companies in which the majority of all costs are local-currency based. A 10% change in the value of all foreign currencies would have an immaterial effect on the Company's financial position and cash flows. As part of an on-going process of assessing business risk, management has identified risk factors which are disclosed in Item 1A. Risk Factors of this Report on Form 10-K.

ITEM 8 FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The Financial Statements and Supplementary Data required by this item are listed at Part IV, Item 15, Exhibits, Financial Statement Schedules.

ITEM 9 CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Management, under the supervision of the Company's Chief Executive Officer and Chief Financial Officer, periodically evaluate the effectiveness of the design and operation of the Company's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)). Based upon this evaluation, as of December 31, 2017, the Chief Executive Officer and the Chief Financial Officer have concluded that these disclosure controls and procedures are effective in ensuring that the information required to be disclosed in reports filed under the Securities Exchange Act of 1934 is (i) recorded, processed, summarized and reported on a timely basis, and (ii) accumulated and communicated to the Company's management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934 for AVD and its subsidiaries ("the Company"). The Company's internal control system over financial reporting is designed to provide reasonable assurance to management and the Board of Directors as to the fair, reliable and timely preparation and presentation of consolidated financial statements in accordance with accounting principles generally accepted in the

United States of America filed with the SEC.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even processes determined to be effective can provide only reasonable assurance with respect to the financial statement preparation and presentation.

Management conducted an evaluation of the Company's internal controls over financial reporting based on a framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework (2013). This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the effectiveness of controls and a conclusion on the evaluation. Based on this evaluation, management believes that as of December 31, 2017, the Company's internal control over financial reporting is effective.

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(Dollars in thousands, except per share data)

Management's assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2017 excluded OHP and Agricenter which were acquired by the Company in the fourth quarter of 2017. Total assets constituted approximately 14% of consolidated total assets and total sales of these acquisitions constituted approximately 4% of consolidated sales and were included in the Company's consolidated total assets and the Company's consolidated sales, respectively, as of and for the year ended December 31, 2017. Companies are allowed to exclude acquisitions from their assessment of internal control over financial reporting during the first year of an acquisition while integrating the acquired company under guidelines established by the SEC.

BDO USA, LLP, the independent registered public accounting firm that audited the consolidated financial statements included in the Annual Report on Form 10-K, was engaged to attest to and report on the effectiveness of AVD's internal control over financial reporting as of December 31, 2017. Its reports are included herein.

Changes in Internal Controls over Financial Reporting

There were no changes in internal controls over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders

American Vanguard Corporation

Newport Beach, California

Opinion on Internal Control over Financial Reporting

We have audited American Vanguard Corporation's (the "Company's") internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "COSO criteria"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company and subsidiaries as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes and schedule and our report dated March 14, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, 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.

As indicated in the accompanying Item 9A, Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of OHP, Inc. and Agricenter S.A. (collectively referred to as the "Acquisitions"), which were acquired on October 2, 2017 and October 27, 2017, respectively, and which are included in the consolidated balance sheet of the Company and subsidiaries as of December 31, 2017, and the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows for the year then ended. The Acquisitions combined constituted approximately 14% of total assets as of December 31, 2017, and approximately 4% of revenues for the year then ended. Management did not assess the effectiveness of internal control over financial reporting of the Acquisitions because of the timing of the Acquisitions. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of the Acquisitions.

Definition and Limitations of Internal Control over Financial Reporting



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

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

/s/ BDO USA, LLP

Costa Mesa, California

March 14, 2018

AMERICAN VANGUARD CORPORATION

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ITEM 9B OTHER INFORMATION

None.

PART III

ITEM 10 DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information set forth under the captions “Executive Officers of the Company,” “Election of Directors,” “Information about the Board of Directors and Committees of the Board” and “Transactions with Management and Others—Section 16(a) Beneficial Ownership Reporting Compliance” in our definitive proxy statement for our Annual Meeting of Stockholders to be held in 2018 (the “Proxy Statement”), which will be filed with the SEC within 120 days of the end of our fiscal year ended December 31, 2017, is incorporated herein by reference.

ITEM 11 EXECUTIVE  
COMPENSATION

Except as specifically provided, the information set forth under the captions “Compensation of Executive Officers” and “Information about the Board of Directors and Committees of the Board—Compensation of Directors” in the Proxy Statement is incorporated herein by reference.

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

The disclosure contained in Part II, Item 5 under “Equity Compensation Plan Information” is incorporated herein by reference. Information regarding security ownership of certain beneficial owners and management is incorporated by reference to the information set forth under the caption “Security Ownership of Certain Beneficial Owners and Management” in the Proxy Statement.

ITEM 13 CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information set forth under the captions “Transactions with Management and Others” and “Information about the Board of Directors and Committees of the Board” in the Proxy Statement is incorporated herein by reference.

ITEM 14 PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information regarding principal accountant fees and services is incorporated herein by reference to the information set forth under the caption “Ratification of the Selection of Independent Registered Public Accounting Firm—Relationship of the Company with Independent Registered Public Accounting Firm” in the Proxy Statement.

AMERICAN VANGUARD CORPORATION

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PART IV

ITEM 15 EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

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

Index to Consolidated Financial Statements and Supplementary Data:

Description	Page No
Financial Statements:	
<u>Report of Independent Registered Public Accounting Firm</u>	41
<u>Consolidated Balance Sheets as of December 31, 2017 and 2016</u>	42
<u>Consolidated Statements of Operations for the Years Ended December 31, 2017, 2016, and 2015</u>	43
<u>Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2017, 2016, and 2015</u>	44
<u>Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2017, 2016 and 2015</u>	45
<u>Consolidated Statements of Cash Flows for the Years Ended December 31, 2017, 2016, and 2015</u>	46
<u>Summary of Significant Accounting Policies and Notes to Consolidated Financial Statements</u>	47
(b) Exhibits Index	

AMERICAN VANGUARD CORPORATION

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EXHIBIT INDEX

ITEM 15

Exhibit

Number Description of Exhibit

- 3.1 Amended and Restated Certificate of Incorporation of American Vanguard Corporation (filed as Exhibit 3.1 to the Company's Form 10-K for the year ended December 31, 2003, which was filed on March 30, 2004 with the Securities Exchange Commission and incorporated herein by reference).
- 3.2 Certificate of Amendment of Amended and Restated Certificate of Incorporation of American Vanguard Corporation (filed as Exhibit 3.2 to the Company's Form 10-Q/A for the period ended June 30, 2004, which was filed with the Securities Exchange Commission on February 23, 2005 and incorporated herein by reference).
- 3.3 Amended and Restated Bylaws of American Vanguard Corporation dated as of June 5, 2014 (filed as Exhibit 99.1 to the Company's Form 8-K, which was filed with the Securities Exchange Commission on June 7, 2014 and incorporated herein by reference.)
- 4 Form of Indenture (filed as Exhibit 4.4 to the Company's Registration Statement on Form S-3 (File No. 333-122981) and incorporated herein by reference).
- 10.1 American Vanguard Corporation Employee Stock Purchase Plan (filed as Appendix B to the Company's Proxy Statement filed with the Securities and Exchange Commission on May 31, 2001 and incorporated herein by reference).
- 10.2 American Vanguard Corporation Amended and Restated Stock Incentive Plan as of June 8, 2016 (filed as Appendix A to the Company's Proxy Statement filed with the Securities and Exchange Commission on April 25, 2016 and incorporated herein by reference).
- 10.3 Form of Incentive Stock Option Agreement under the American Vanguard Corporation Fourth Amended and Restated Stock Incentive Plan , (filed as Exhibit 10.3 with the Company's Annual Report on Form 10-K for the period ended December 31, 2004, which was filed with the Securities and Exchange Commission on March 16, 2005 and incorporated herein by reference).
- 10.4 Form of Non-Qualified Stock Option Agreement under the American Vanguard Corporation Fourth Amended and Restated Stock Incentive Plan , (filed as Exhibit 10.4 with the Company's Annual Report on Form 10-K for the period ended December 31, 2004, which was filed with the Securities and Exchange Commission on March 16, 2005 and incorporated herein by reference).
- 10.5

Employment Agreement between American Vanguard Corporation and Eric G. Wintemute dated January 15, 2008 (filed as Exhibit 10.5 to the Company's Annual Report on Form 10-K for the year ended December 31, 2007, which was filed with the Securities Exchange Commission on March 17, 2008 and incorporated herein by reference).

- 10.8 Form of Change of Control Severance Agreement, dated effective as of January 1, 2004, between American Vanguard Corporation and its executive and senior officers (filed as Exhibit 10.2 to the Company's Form 10-Q for the period ended March 31, 2004, which was filed with the Securities Exchange Commission on May 17, 2004 and incorporated herein by reference.)
- 10.9 Form of Amendment of Change of Control Severance Agreement, dated effective as of July 11, 2008, between American Vanguard Corporation and named executive officers and senior officers (filed as Exhibit 99.1 to the Company's Form 8-K, which was filed on July 11, 2008 with the Securities and Exchange Commission and incorporated herein by reference).
- 10.10 Form of Indemnification Agreement between American Vanguard Corporation and its Directors (as filed as Exhibit 10.7 to the Company's Annual Report on Form 10-K for the period ended December 31, 2004, which was filed with the Securities and Exchange Commission on March 16, 2005 and incorporated herein by reference).
- 10.11 Description of Compensatory Arrangements Applicable to Non-Employee Directors for 2005 (filed as Exhibit 10.1 to the Company's Form 8-K, which was filed with the Securities and Exchange Commission on June 15, 2005 and incorporated herein by reference).

AMERICAN VANGUARD CORPORATION

AND SUBSIDIARIES

Exhibit

Number Description of Exhibit

- 10.12 American Vanguard Corporation Employee Stock Purchase Plan amended and restated as of June 30, 2011 (filed as Exhibit A to the Company's Proxy Statement which was filed with the Securities Exchange Commission on April 2011  
and is incorporated herein by reference).
- 10.13 Form of Restricted Stock Agreement between American Vanguard Corporation and named executive officers (filed as Exhibit 99.1 to the Company's Form 8-K, which was filed with the Securities Exchange Commission on July 24, 2008 and incorporated herein by reference).
- 10.14 Form of Amended and Restated Change of Control Severance Agreement effective as of January 1, 2014 (filed as Exhibit 10.14 to the Company's 10-K, which was filed with the Securities Exchange Commission on February 28, 2014 and incorporated herein by reference).
- 10.15 Form of American Vanguard Corporation Amended and Restated Stock Incentive Plan TSR-Based Restricted Stock Units Award Agreement dated June 6, 2013 (filed as Exhibit 10.15 to the Company's 10-K, which was filed with the Securities Exchange Commission on February 28, 2014 and incorporated herein by reference).
- 10.16 Form of American Vanguard Corporation Amended and Restated Stock Incentive Plan Performance-Based Restricted Stock Units Award Agreement dated June 6, 2013 (filed as Exhibit 10.16 to the Company's 10-K, which was filed with the Securities Exchange Commission on February 28, 2014 and incorporated herein by reference).
- 10.17 Third Amendment to Second Amended and Restated Credit Agreement dated as of June 30, 2017 among AMVAC and certain affiliates on the one hand, and a group of commercial lenders led by Bank of the West as agent, swing line lender, and letter of credit issuer, on the other hand (filed as Exhibit 10.1 to the Company's Form 8-K, which was filed with the Securities Exchange Commission on July 6, 2017 and is incorporated herein by reference).
- 10.18 Employment Agreement dated as of December 31, 2014 by and between AMVAC Chemical Corporation and Ulrich Trogele (filed as Exhibit 10.18 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016 and incorporated herein by reference).
- 21 List of Subsidiaries of the Company.\*
- 23 Consent of BDO USA, LLP, Independent Registered Public Accounting Firm.\*
- 31.1 Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*
- 31.2 Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.\*

32.1 Certifications Pursuant to 18 U.S.C. Section 1350 as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.\*

101 The following materials from American Vanguard Corp’s Annual Report on Form 10-K for the year ended December 31, 2017, formatted in XBRL (Extensible Business Reporting Language): (i) Consolidated Balance Sheets; (ii) Consolidated Statements of Operations; (iii) Consolidated Statements of Stockholders’ Equity; (iv) Consolidated Statements of Comprehensive Income; (v) Consolidated Statements of Cash Flows; and (vi) Notes to Consolidated Financial Statements, tagged as blocks of text.\*

\*Filed herewith.

(c) Valuation and Qualifying Accounts:

Schedule II-A—Valuation and Qualifying Accounts

Allowance for Doubtful Accounts Receivable (in thousands)

	Balance at Beginning of	Period	Additions Charged to Costs and Expenses	Deductions	Period End of	Balance at
Fiscal Year Ended	Period				Period	
December 31, 2017	\$ 42		\$ 31	\$ (27)		\$ 46
December 31, 2016	\$ 423		\$ 3	\$ (384)		\$ 42
December 31, 2015	\$ 166		\$ 332	\$ (75)		\$ 423

## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## Inventory Reserve (in thousands)

	Balance at Beginning of			Balance at End of Period
Fiscal Year Ended	Period	Additions	Deductions	
December 31, 2017	\$ 3,594	—	\$ (457 )	\$ 3,137
December 31, 2016	\$ 4,020	—	\$ (426 )	\$ 3,594
December 31, 2015	\$ 2,995	\$ 1,025	—	\$ 4,020

See accompanying report of independent registered public accounting firm on page 41 of this annual report.

## ITEM 16 FORM 10-K SUMMARY

None



AMERICAN VANGUARD CORPORATION

AND SUBSIDIARIES

SIGNATURES

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

AMERICAN VANGUARD CORPORATION

(Registrant)

By: /s/ ERIC G. WINTEMUTE Eric G. Wintemute Chief Executive Officer and Chairman of the Board March 14, 2018	By: /s/ DAVID T. JOHNSON David T. Johnson Chief Financial Officer and Principal Accounting Officer March 14, 2018
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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 indicated.

By: /s/ ERIC G. WINTEMUTE Eric G. Wintemute Principal Executive Officer and Chairman of the Board March 14, 2018	By: /s/ DAVID T. JOHNSON David T. Johnson Principal Financial Officer and Principal Accounting Officer March 14, 2018
By: /s/ DEBRA EDWARDS Debra Edwards Director March 14, 2018	By: /s/ JOHN L. KILLMER John L. Killmer Director March 14, 2018
By: /s/ LAWRENCE S. CLARK Lawrence S. Clark	By: /s/ SCOTT D. BASKIN Scott D. Baskin

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Director

Director

March 14, 2018

March 14, 2018

By: /s/ MORTON D. ERLICH  
Morton D. Erlich

By: /s/ ALFRED INGULLI  
Alfred Ingulli

Director

Director

March 14, 2018

March 14, 2018

By: /s/ ESMAIL ZIRAKPARVAR  
Esmail Zirakparvar

Director

March 14, 2018

AMERICAN VANGUARD CORPORATION

AND SUBSIDIARIES

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders

American Vanguard Corporation

Newport Beach, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of American Vanguard Corporation (the “Company”) and subsidiaries as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive income, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company and subsidiaries at December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company's internal control over financial reporting as of December 31, 2017, 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 March 14, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP

We have served as the Company's auditor since 1991.

Costa Mesa, California

March 14, 2018

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## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEETS

December 31, 2017 and 2016

(In thousands, except share data)

	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	\$11,337	\$7,869
Receivables:		
Trade, net of allowance for doubtful accounts of \$46 and \$42, respectively	102,534	83,777
Other	7,071	3,429
	109,605	87,206
Inventories	123,124	120,576
Prepaid expenses	10,817	11,424
Total current assets	254,883	227,075
Property, plant and equipment, net	49,321	50,295
Intangible assets, net of applicable amortization	180,950	121,433
Goodwill	22,184	—
Other assets	28,254	31,153
Total assets	\$535,592	\$429,956
Liabilities and Stockholders' Equity		
Current liabilities:		
Current installments of other liabilities	\$5,395	\$26
Accounts payable	53,748	24,358
Deferred revenue	14,574	3,848
Accrued program costs	39,054	42,930
Accrued expenses and other payables	12,061	12,072
Income taxes payable	1,370	13,840
Total current liabilities	126,202	97,074
Long-term debt, excluding current installments	77,486	40,951
Other liabilities, excluding current installments	10,306	2,868
Deferred income tax liabilities, net	16,284	6,706
Total liabilities	230,278	147,599
Commitments and contingent liabilities		
Stockholders' equity:		
Preferred stock, \$.10 par value per share; authorized 400,000 shares; none issued	—	—
Common stock, \$.10 par value per share; authorized 40,000,000 shares; issued 32,241,866 shares in 2017 and 31,819,695 shares in 2016	3,225	3,183
Additional paid-in capital	75,658	71,699
Accumulated other comprehensive loss	(4,507 )	(4,851 )
Retained earnings	238,953	220,428

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	313,329	290,459
Less treasury stock at cost, 2,450,634 shares in 2017 and in 2016	(8,269 )	(8,269 )
American Vanguard Corporation stockholders' equity	305,060	282,190
Non-controlling interest	254	167
Total stockholders' equity	305,314	282,357
Total liabilities and stockholders' equity	\$535,592	\$429,956

See summary of significant accounting policies and notes to consolidated financial statements.

## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF OPERATIONS

Years ended December 31, 2017, 2016 and 2015

(In thousands, except per share data)

	2017	2016	2015
Net sales	\$355,047	\$312,113	\$289,382
Cost of sales	207,655	183,825	177,480
Gross profit	147,392	128,288	111,902
Operating expenses	120,598	107,748	100,378
Operating income	26,794	20,540	11,524
Interest expense, net	1,941	1,623	2,562
Income before provision for income taxes and loss on equity investments	24,853	18,917	8,962
Provision for income taxes	4,443	5,540	2,009
Income before loss on equity investments	20,410	13,377	6,953
Less net loss from equity method investments	(49 )	(353 )	(636 )
Net income	20,361	13,024	6,317
Net (income) loss attributable to non-controlling interest	(87 )	(236 )	274
Net income attributable to American Vanguard	\$20,274	\$12,788	\$6,591
Earnings per common share—basic	\$0.70	\$0.44	\$0.23
Earnings per common share—assuming dilution	\$0.68	\$0.44	\$0.23
Weighted average shares outstanding—basic	29,100	28,859	28,673
Weighted average shares outstanding—assuming dilution	29,703	29,394	29,237

See summary of significant accounting policies and notes to consolidated financial statements.





## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Years ended December 31, 2017, 2016 and 2015

(In thousands)

	2017	2016	2015
Net income	\$20,361	\$13,024	\$6,317
Other comprehensive income			
Foreign currency translation adjustment	344	(1,310)	(1,571)
Comprehensive income	20,705	11,714	4,746
Less: Comprehensive income (loss) attributable to non-controlling interest	87	236	(274)
Comprehensive income attributable to American Vanguard	\$20,618	\$11,478	\$5,020

See summary of significant accounting policies and notes to consolidated financial statements

## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

Years ended December 31, 2017, 2016 and 2015

(In thousands, except share data)

	Common Shares	Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income/(Loss)	Retained Earnings	Treasury Shares	Stock Amount	AVD Total	Non- Controlling Interest	Total
Balance, December 31, 2014	31,550,477	\$3,156	\$66,232	\$(1,970)	\$202,488	2,450,634	\$(8,269)	\$261,637	\$(634)	\$261,003
Stocks issued under ESPP	50,452	5	568	—	—	—	—	573	—	573
Cash dividends on common stock (\$0.02 per share)	—	—	—	—	(572 )	—	—	(572 )	—	(572 )
Foreign currency translation adjustment, net	—	—	—	(1,571)	—	—	—	(1,571 )	—	(1,571 )
Stock based compensation	—	—	3,881	—	—	—	—	3,881	—	3,881
Stock options exercised; grants, termination, and vesting of restricted stock units (net of shares in lieu of taxes)	37,296	3	(259 )	—	—	—	—	(256 )	—	(256 )
Tax effect from share based compensation	—	—	(924 )	—	—	—	—	(924 )	—	(924 )
Adjustment and purchase of non-controlling	—	—	(964 )	—	—	—	—	(964 )	839	(125 )

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interest										
Net income (loss)	—	—	—	—	6,591	—	—	6,591	(274)	6,317
Balance, December 31, 2015	31,638,225	3,164	68,534	(3,541)	208,507	2,450,634	(8,269)	268,395	(69)	268,326
Stocks issued under ESPP	42,730	4	558	—	—	—	—	562	—	562
Cash dividends on common stock (\$0.03 per share)	—	—	—	—	(867)	—	—	(867)	—	(867)
Foreign currency translation adjustment, net	—	—	—	(1,310)	—	—	—	(1,310)	—	(1,310)
Stock based compensation	—	—	3,167	—	—	—	—	3,167	—	3,167
Stock options exercised; grants, termination, and vesting of restricted stock units (net of shares in lieu of taxes)	138,740	15	(336)	—	—	—	—	(321)	—	(321)
Tax effect from share based compensation	—	—	(224)	—	—	—	—	(224)	—	(224)
Net income	—	—	-	—	12,788	—	—	12,788	236	13,024
Balance, December 31, 2016	31,819,695	3,183	71,699	(4,851)	220,428	2,450,634	(8,269)	282,190	167	282,357
Stocks issued under ESPP	34,016	4	551	—	—	—	—	555	—	555
Cash dividends on common stock (\$0.06 per share)	—	—	—	—	(1,749)	—	—	(1,749)	—	(1,749)
Foreign currency translation adjustment, net	—	—	—	344	—	—	—	344	—	344
Stock based compensation	—	—	4,714	—	—	—	—	4,714	—	4,714
	388,155	38	(1,306)	—	—	—	—	(1,268)	—	(1,268)

Stock options exercised; grants, termination, and vesting of restricted stock units (net of shares in lieu of taxes)											
Net income	—	—	—	—	20,274	—	—	20,274	87	20,361	
Balance, December 31, 2017	32,241,866	\$3,225	\$75,658	\$(4,507)	\$238,953	2,450,634	\$(8,269)	\$305,060	\$254	\$305,314	

See summary of significant accounting policies and notes to consolidated financial statements

## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF CASH FLOWS

Years ended December 31, 2017, 2016 and 2015

(In thousands)

	2017	2016	2015
Increase cash			
Cash flows from operating activities:			
Net income	\$20,361	\$13,024	\$6,317
Adjustments to reconcile net income to net cash provided by (used in)			
operating activities:			
Depreciation and amortization of fixed and intangible assets	16,959	16,327	16,474
Amortization of other long term assets and debt issuance costs	5,221	5,203	5,275
Amortization of discounted liabilities	110	16	140
Stock-based compensation	4,714	3,167	3,881
Excess tax benefit from share based compensation	—	(96 )	(23 )
Increase (decrease) in deferred income taxes	398	(151 )	27
Operating loss from equity method investment	49	353	629
Loss from dilution of equity method investment	—	—	7
Changes in assets and liabilities associated with operations, net of business			
combinations:			
Decrease (increase) in net receivables	754	(11,817 )	13,034
Decrease in inventories	16,183	15,901	29,154
(Increase) decrease in income tax receivable/payable, net	(12,073 )	1,186	4,872
Decrease (increase) in prepaid expenses and other assets	647	(3,872 )	2,082
Increase (decrease) in accounts payable	3,322	9,015	(5,068 )
Increase (decrease) in deferred revenue	10,726	(5,040 )	7,990
Decrease in accrued program costs	(4,529 )	(1,441 )	(8,175 )
(Decrease) increase in other payables	(3,841 )	4,631	1,952
Net cash provided by operating activities	59,001	46,406	78,568
Cash flows from investing activities:			
Capital expenditures	(6,666 )	(10,630 )	(6,899 )
Investment	(950 )	(3,283 )	(125 )
Acquisitions of businesses and intangible assets	(81,896 )	(224 )	(36,667 )
Net cash used in investing activities	(89,512 )	(14,137 )	(43,691 )
Cash flows from financing activities:			
Payments under line of credit agreement	(103,975)	(107,600)	(121,400)
Borrowings under line of credit agreement	141,000	80,000	90,880
Debt issuance cost	(751 )	—	—
Payment on other long-term liabilities	(26 )	(704 )	(1,543 )

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Excess tax benefit from share based compensation	—	96	23
Net payment from the issuance of common stock (sale of stock under ESPP, exercise of stock options and shares purchased for tax withholding)	(713 )	241	317
Payment of cash dividends	(1,600 )	(578 )	(1,141 )
Net cash provided by (used in) financing activities	33,935	(28,545 )	(32,864 )
Net increase in cash and cash equivalents	3,424	3,724	2,013
Effect of exchange rate changes on cash and cash equivalents	44	(1,379 )	(1,374 )
Cash and cash equivalents at beginning of year	7,869	5,524	4,885
Cash and cash equivalents at end of year	\$11,337	\$7,869	\$5,524
Supplemental cash flow information:			
Cash paid (received) during the year for:			
Interest	\$1,500	\$1,748	\$2,750
Income taxes, net	\$17,841	\$4,947	\$(3,697 )

See summary of significant accounting policies and notes to the consolidated financial statements

## AMERICAN VANGUARD CORPORATION

## AND SUBSIDIARIES

## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years Ended December 31, 2017, 2016 and 2015

(Dollars in thousands, except per share data)

## Description of Business, Basis of Consolidation, Basis of Presentation and Significant Accounting Policies

American Vanguard Corporation (the “Company”) is primarily a specialty chemical manufacturer that develops and markets safe and effective products for agricultural, commercial and consumer uses. The Company manufactures and formulates chemicals for crops, human and animal protection. The consolidated financial statements include the accounts of the Company, its wholly-owned subsidiaries and Envance, its majority owned subsidiary. All significant intercompany accounts and transactions have been eliminated in consolidation. The Company operates within a single operating category.

Based on similar economic and operational characteristics, the Company’s business is aggregated into one reportable category. Selective enterprise information is as follows:

	2017	2016	2015
Net sales:			
Insecticides	\$ 132,137	\$ 119,226	\$ 117,180
Herbicides/soil fumigants/fungicides	121,581	123,540	111,897
Other, including plant growth regulators	47,691	29,438	29,013
Total crop	301,409	272,204	258,090
Non-crop	53,638	39,909	31,292
	\$ 355,047	\$ 312,113	\$ 289,382
Gross profit:			
Crop	\$ 117,892	\$ 107,821	\$ 97,198
Non-crop	29,500	20,467	14,704
	\$ 147,392	\$ 128,288	\$ 111,902

Due to elements inherent to the Company’s business, such as differing and unpredictable weather patterns, crop growing cycles, changes in product mix of sales and ordering patterns that may vary in timing, measuring the Company’s performance on a quarterly basis (for example, gross profit margins on a quarterly basis may vary significantly) even when such comparisons are favorable, is not as good an indicator as full-year comparisons.

Reclassifications — Certain prior years’ amounts have been reclassified to conform to the current year’s presentation.

Cost of Sales—In addition to normal cost centers (i.e., direct labor, raw materials), the Company also includes such cost centers as Health and Safety, Environmental, Maintenance and Quality Control in cost of sales.

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Operating Expenses—Operating expenses include cost centers for Selling, General and Administrative, Research, Product Development, and Regulatory, and Freight, Delivery and Warehousing.

	2017	2016	2015
Selling	\$29,112	\$27,442	\$27,052
General and administrative	37,660	32,128	28,516
Research, product development and regulatory	26,076	21,298	19,116
Freight, delivery and warehousing	27,750	26,880	25,694
	\$120,598	\$107,748	\$100,378

Advertising Expense—The Company expenses advertising costs in the period incurred. Advertising expenses, which include promotional costs, are recognized in operating costs (specifically in selling expenses) in the consolidated statements of operations and were \$3,020 in 2017, \$2,271 in 2016 and \$3,535 in 2015.



Cash and cash equivalents—The Company’s cash and cash equivalents consist primarily of certificates of deposit with an initial term of less than three months. For purposes of the consolidated statements of cash flows, the Company considers all highly liquid debt instruments with original maturities of three months or less to be cash equivalents.

Inventories — The Company values its inventories at lower of cost or net realizable value. Cost is determined by the first-in, first-out (“FIFO”) method, including material, labor, factory overhead and subcontracting services. The Company writes down and makes adjustments to its inventory carrying values as a result of net realizable value assessments of slow moving and obsolete inventory and other annual adjustments to ensure that our standard costs continue to closely reflect manufacturing cost. The Company recorded an inventory reserve allowance of \$3,137 at December 31, 2017, as compared to \$3,594 at December 31, 2016.

The components of inventories consist of the following:

	2017	2016
Finished products	\$ 107,595	\$ 103,832
Raw materials	15,529	16,744
	\$ 123,124	\$ 120,576

Revenue Recognition and Allowance for Doubtful Accounts—Revenue from sales is recognized at the time title and the risks of ownership pass. This is when the customer has made the fixed commitment to purchase the goods, the products are shipped per the customer’s instructions, the sales price is fixed and determinable, and collection is reasonably assured. The Company has in place procedures to ensure that revenue is recognized when earned. The procedures are subject to management’s review and from time to time certain sales are excluded until it is clear that the title has passed and there is no further recourse to the Company. From time to time, the Company may offer a program to eligible customers, in good standing, that provides extended payment terms on a portion of the sales on selected products. The Company analyzes these extended payment programs in connection with its revenue recognition policy to ensure all revenue recognition criteria are satisfied at the time of sale. Allowance for doubtful accounts is established based on estimates of losses related to customer receivable balances. Estimates are developed using either standard quantitative measures based on historical losses, adjusted for current economic conditions or by evaluating specific customer accounts for risk of loss.

Accrued Program Costs— In accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 605, the Company classifies certain payments to its customers as a reduction of sales revenues. The Company describes these payments as “Programs”. Programs are a critical part of doing business in the U.S. agricultural chemicals business market place. For accounting purposes, programs are recorded as a reduction in gross sales and include market pricing adjustments, volume take up or other key performance indicator driven payments made to distributors, retailers or growers predominantly at the end of a growing season. Each quarter management compares each sale transaction with program guidelines to determine what program liability has been incurred. Once this initial calculation is made for the specific quarter, sales and marketing management along with executive and financial management review the accumulated program balance and make assessments of whether or not customers are tracking in a manner that indicates that they will meet the requirements set out in the terms and conditions attached to each program. If management believes that customers are falling short of or exceeding their previously anticipated annual goals, then periodic adjustments will be made to the accumulated accrual to properly reflect the Company’s best estimate of the liability at the balance sheet date. The majority of adjustments are made at the end of the crop season,

at which time customer performance can be fully assessed. Programs are paid out predominantly on an annual basis, usually in the final quarter of the financial year or the first quarter of the following year. The Company recorded accrued program costs of \$39,054 at December 31, 2017, as compared to \$42,930 at December 31, 2016.

Long-lived Assets— Long-lived assets primarily consist of the costs of intangible assets and of proprietary returnable packaging assets including Smartbox and Lock and Load containers. The carrying value of long-lived assets is reviewed for impairment quarterly and/or whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. The Company evaluates recoverability of an asset group by comparing the carrying value to the future undiscounted cash flows that it expects to generate from the asset group. If the comparison indicates that the carrying value of an asset group is not recoverable, measurement of the impairment loss is based on the fair value of the asset. There were no circumstances that would indicate any impairment of the carrying value of these long-lived assets and no material impairment losses were recorded in 2017 or 2016.

**Property, Plant and Equipment and Depreciation**— Property, plant and equipment includes the cost of land, buildings, machinery and equipment, office furniture and fixtures, automobiles, construction projects and significant improvements to existing plant and equipment. Interest costs related to significant construction projects are capitalized at the Company's current weighted average effective interest rate. Expenditures for minor repairs and maintenance are expensed as incurred. When property or equipment is sold or otherwise disposed of, the related cost and accumulated depreciation are removed from the respective accounts and the gain or loss realized on disposition is reflected in earnings. All plant and equipment is depreciated using the straight-line method, utilizing the estimated useful property lives. See note 1 for useful lives.

**Foreign Currency Translation**— Assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, have been translated at period end exchange rates, and profit and loss accounts have been translated using weighted average yearly exchange rates. Adjustments resulting from translation have been recorded in the equity section of the balance sheet as cumulative translation adjustments in other comprehensive income (loss). The effects of foreign currency exchange gains and losses on transactions that are denominated in currencies other than the Company's functional currency, including transactions denominated in the local currencies of the Company's international subsidiaries where the functional currency is the U.S. dollar, are remeasured to the functional currency using the end of the period exchange rates. The effects of remeasurement related to foreign currency transactions are included in the consolidated statements of operations.

**Goodwill and Other Intangible Assets**— The primary identifiable intangible assets of the Company relate to assets associated with its product and business acquisitions. The Company adopted the provisions of ASC 350, under which identifiable intangibles with finite lives are amortized and those with indefinite lives are not amortized. The estimated useful life of an identifiable intangible asset to the Company is based upon a number of factors including the effects of demand, competition, and expected changes in the marketability of the Company's products. The Company re-evaluates whether these intangible assets are impaired on both a quarterly and an annual basis and anytime when there is a specific indicator for impairment, relying on a number of factors including operating results, business plans and future cash flows. Identifiable intangible assets that are subject to amortization are evaluated for impairment using a process similar to that used to evaluate long-lived assets. The impairment test for identifiable intangible assets not subject to amortization consists of either a qualitative assessment or a comparison of the fair value of the intangible asset with its carrying amount. An impairment loss, if any, is recognized for the amount by which the carrying value exceeds the fair value of the asset. Fair value is typically estimated using a discounted cash flow analysis. When determining future cash flow estimates, the Company considers historical results adjusted to reflect current and anticipated operating conditions. Estimating future cash flows requires significant judgment by the Company, in such areas as: future economic conditions, industry-specific conditions, product pricing and necessary capital expenditures. The use of different assumptions or estimates for future cash flows could produce different impairment amounts (or none at all) for long-lived assets, goodwill and identifiable intangible assets. The Company performed impairment reviews for the years ended December 31, 2017 and 2016 and recorded immaterial impairment losses.

The Company reviews goodwill for impairment utilizing either a qualitative assessment or a two-step process. If the Company decides that it is appropriate to perform a qualitative assessment and concludes that the fair value of a reporting unit more likely than not exceeds its carrying value, no further evaluation is necessary. If the Company performs the two-step process, the first step of the goodwill impairment test is used to identify potential impairment by comparing the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired and the second step of the impairment test is unnecessary. If the carrying amount of a reporting unit exceeds its fair value, the second step is performed to measure the amount of impairment by comparing the carrying amount of the goodwill to a determination of the implied value of the goodwill. If the carrying amount of goodwill is greater than the implied value, an impairment charge is recognized for the difference. The Company annually tests goodwill for impairment in beginning of the fourth quarter.

Income Taxes—The Company utilizes the liability method of accounting for income taxes as set forth in ASC 740. Under the liability method, deferred taxes are determined based on the temporary differences between the financial statement and tax basis of assets and liabilities using tax rates expected to be in effect during the years in which the basis differences reverse. A valuation allowance is recorded when it is more likely than not that some of the deferred tax assets will not be realized. In determining the need for valuation allowances, the Company considers projected future taxable income and the availability of tax planning strategies. If in the future the Company determines that it would not be able to realize its recorded deferred tax assets, an increase in the valuation allowance would be recorded, decreasing earnings in the period in which such determination is made.

The Company assesses its income tax positions and records tax benefits for all years subject to examination based upon the Company's evaluation of the facts, circumstances and information available at the reporting date. For those tax positions where there is greater than 50% likelihood that a tax benefit will be sustained, the Company has recorded the largest amount of tax benefit that may potentially be realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where there is less than 50% likelihood that a tax benefit will be sustained, no tax benefit has been

recognized in the consolidated financial statements. At December 31, 2017 and 2016, the Company recorded unrecognized tax benefits of \$2,118 and \$1,893, respectively.

Per Share Information—FASB ASC 260 requires dual presentation of basic earnings per share (“EPS”) and diluted EPS on the face of all consolidated statements of operations. Basic EPS is computed as net income divided by the weighted average number of shares of common stock outstanding during the period. Diluted EPS reflects potential dilution to EPS that could occur if securities or other contracts, which, for the Company, consists of restricted stock grants and options to purchase shares of the Company’s common stock, are exercised as calculated using the treasury stock method.

The components of basic and diluted earnings per share were as follows:

	2017	2016	2015
<b>Numerator:</b>			
Net income attributable to American Vanguard	\$20,274	\$12,788	\$6,591
<b>Denominator:</b>			
Weighted average shares outstanding—basic	29,100	28,859	28,673
Dilutive effect of stock options and grants	603	535	564
	29,703	29,394	29,237

For the years ended December 31, 2017, 2016, and 2015 no options were excluded from the computation.

Accounting Estimates—The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, and expenses at the date that the consolidated financial statements are prepared. Significant estimates relate to the allowance for doubtful accounts, inventory reserves, impairment of long-lived assets, accrued program costs, and stock based compensation. Actual results could materially differ from those estimates.

Total comprehensive income—In addition to net income, total comprehensive income includes changes in equity that are excluded from the consolidated statements of operations and are recorded directly into a separate section of stockholders’ equity on the consolidated balance sheets. For the years ended December 31, 2017, 2016, and 2015 total comprehensive income consisted of net income attributable to American Vanguard and foreign currency translation adjustments.

Stock-Based Compensation—The Company accounts for stock-based awards to employees and directors pursuant to ASC 718. When applying the provisions of ASC 718, the Company also applies the provisions of Staff Accounting Bulletin (“SAB”) No. 107 and SAB No. 110.

ASC 718 requires companies to estimate the fair value of share-based payment awards on the date of grant. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service periods in the Company’s Consolidated Statements of Operations.

Stock-based compensation expense recognized during the period is based on the fair value of the portion of share-based payment awards that is ultimately expected to vest during the period. Stock-based compensation expense recognized is reduced for estimated forfeitures pursuant to ASC 718. Estimated forfeitures recognized in the

Company's Consolidated Statements of Operations reduced compensation expense by \$177, \$118, and \$144 for the years ended December 31, 2017, 2016, and 2015, respectively. The Company estimates that 15.1% of all restricted stock grants, 15.1% of the performance based restricted shares and 4.5% of all stock option grants that are currently vesting will be forfeited. These estimates are reviewed quarterly and revised as necessary.

The below tables illustrate the Company's stock based compensation, unamortized stock-based compensation, and remaining weighted average period for the years ended December 31, 2017, 2016 and 2015. This projected expense will change if any stock options and restricted stock are granted or cancelled prior to the respective reporting periods, or if there are any changes required to be made for estimated forfeitures.

	Stock-Based Compensation	Unamortized Stock-Based Compensation	Remaining Weighted Average Period (years)
<b>December 31, 2017</b>			
Incentive Stock Options	\$ 345	\$ —	—
Performance Based Options	416	—	—
Restricted Stock	2,705	3,788	1.0
Performance Based Restricted Stock	1,248	1,642	1.8
<b>Total</b>	<b>\$ 4,714</b>	<b>\$ 5,430</b>	
<b>December 31, 2016</b>			
Incentive Stock Options	\$ 354	\$ 397	1.0
Performance Based Options	188	178	1.0
Restricted Stock	1,630	2,153	1.6
Performance Based Restricted Stock	995	796	1.7
<b>Total</b>	<b>\$ 3,167</b>	<b>\$ 3,524</b>	
<b>December 31, 2015</b>			
Incentive Stock Options	\$ 431	\$ 887	2.0
Performance Based Options	149	331	2.0
Restricted Stock	2,972	2,153	1.3
Performance Based Restricted Stock	329	583	1.5
<b>Total</b>	<b>\$ 3,881</b>	<b>\$ 3,954</b>	

The Company uses the Black-Scholes option-pricing model ("Black-Scholes model") to value option grants using the following weighted average assumptions (i.e. risk free interest rate, dividend yield, volatility and average lives). There were no option shares granted during 2017, 2016 or 2015.

The expected volatility and expected life assumptions are highly complex and use subjective variables. The variables take into consideration, among other things, actual and projected employee stock option exercise behavior. The Company estimates the expected term or vesting period using the "safe harbor" provisions of SAB 107 and SAB 110. The Company used historical volatility as a proxy for estimating expected volatility.

The Company values restricted stock grants using the Company's traded stock price on the date of grant. The weighted average grant-date fair values of restricted stock grants during 2017, 2016, and 2015 were \$16.24, \$15.22, and \$12.68, respectively.

Recently Issued Accounting Guidance— In February 2018, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2018-02, Income Statement-Reporting Comprehensive Income (Topic 220). On December 22, 2017, the U.S federal government signed into law the Tax Cuts and Jobs Act, (the “Tax Reform Act”). The current generally accepted accounting principles (“GAAP”) requires deferred tax liabilities and assets to be adjusted for the effect of a change in tax laws or rates with the effect included in income from continuing operations in the reporting period that includes the enactment date. That guidance is applicable even in situations where the related income tax effects of items in accumulated other comprehensive income were originally recognized in other comprehensive income (rather than in income from continuing operations). The standard allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Reform Act, eliminating the stranded tax effects. The update does not affect the requirement on the effect of a change in tax laws or rates be included in income from continuing operations. The update is effective for fiscal years beginning after December 15, 2018. The Company will evaluate the impact of this update for its adoption.

In January 2017, the FASB issued ASU 2017-04, Intangibles-Goodwill and Other (Topic 350). The FASB eliminated the Step 2 from the goodwill impairment test. In computing the implied fair value of goodwill under Step 2, an entity had to perform procedures to determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Under this update, an entity should perform its goodwill impairment test by comparing the fair value of a



reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount the carrying amount exceeds the reporting unit's fair value. This update is effective for fiscal years beginning after December 15, 2019 with early adoption permitted after January 1, 2017. The Company will evaluate the impact of this update and expects to adopt ASU 2017-04 in its financial statements for fiscal year 2018.

In January 2017, the FASB issued ASU 2017-01, Business Combination (Topic 805). The FASB issued this update to clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisition (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The Company adopted this update and has evaluated its current year acquisitions under this standard.

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230). The new standard requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The new standard is effective for fiscal years beginning after December 15, 2017. Based on the composition of the Company's cash and cash equivalent, adoption of the new standard is not expected to have a material impact on our consolidated cash flows statements and will adopt the standard for the year beginning January 1, 2018.

In August 2016, FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230). The new standard addresses eight specific classification issues within the current practice regarding the manner in which certain cash receipts and cash payments are presented. The new standard is effective for fiscal years beginning after December 15, 2017, with early adoption permitted. The Company has reviewed the eight specific issues addressed and does not believe that the adoption of ASU 2016-15 will have a material impact on its statement of cash flows and will adopt the revised standard for the year beginning January 1, 2018.

In October 2016, FASB issued ASU 2016-16, Income Taxes (Topic 740). Current US GAAP prohibits the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold to an outside party. Under the new standard, an entity is to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The new standard does not include new disclosure requirements; however, existing disclosure requirements might be applicable when accounting for the current and deferred income taxes for an intra-entity transfer of an asset other than inventory. The new standard is effective for annual periods beginning after December 15, 2017, including interim reporting periods within those annual periods. The Company has considered its activities with regard to such intra-entity transfers, does not expect the adoption of ASU 2016-16 to have a material impact on our consolidated financial statements and will adopt the standard for the year beginning January 1, 2018.

In February 2016, FASB issued ASU 2016-02, Leases. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. A modified retrospective transition approach is required for lessees for capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements, with certain practical expedients available. We will evaluate our operating lease arrangements to determine the impact of this amendment on the consolidated financial statements. The evaluation will include an extensive review of our leases, which are primarily related to our manufacturing sites, regional sales offices, lease vehicles, and office equipment. The ultimate impact will depend on the Company's lease portfolio at the time the new standard is adopted. The Company expects to adopt ASU 2016-02 for the year beginning

on January 1, 2019.

In May 2014, FASB issued ASU 2014-09, Revenue from Contracts with Customers (Topic 606). ASU 2014-09 outlines a new, single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. This new revenue recognition model provides a five-step analysis in determining when and how revenue is recognized. The new model will require revenue recognition to depict the transfer of promised goods or services to customers in an amount that reflects the consideration a company expects to receive in exchange for those goods or services. In March 2016, FASB issued an amendment to the standard, ASU 2016-08, to clarify the implementation guidance on principal versus agent considerations. Under the amendment, an entity is required to determine whether the nature of its promise is to provide the specified good or service itself (that is, the entity is a principal) or to arrange for that good or service to be provided by the other party (that is, the entity is an agent). In April 2016, FASB issued another amendment to the standard, ASU 2016-10, to clarify identifying performance obligations and the licensing implementation guidance, which retaining the related principles for those areas. The standard and the amendments are effective for annual periods beginning after December 15, 2017, and interim periods therein, using either of the following transition methods: (i) a full retrospective approach reflecting the application of the standard in each prior reporting period with the option to elect certain practical expedients, or (ii) a retrospective approach with the

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cumulative effect of initially adopting ASU 2014-09 recognized at the date of adoption (which includes additional footnote disclosures). These amendments will be effective upon adoption of Topic 606. This standard also requires enhanced disclosures regarding the nature, amount, timing, and uncertainty of revenue and cash flows.

The Company will adopt the new revenue standard as of January 1, 2018 using the modified retrospective method. The Company has substantially completed its analysis of the effect of the adoption of Topic 606 on its revenue streams, which included a detailed contract review to evaluate whether the adoption will result in a change in the timing or amount of revenue recognition. As a result of the analysis performed thus far, the Company determined that for certain products that are deemed to have no alternative use accompanied by an enforceable right to payment for performance completed to date, recognition will change from point in time, to over time. These sales were previously recognized upon delivery, and will now be recognized over time utilizing an output method. In addition, the Company earns royalties on certain licenses granted for the use of its intellectual property, which was previously recognized over time. For certain licenses that are considered functional intellectual property, the Company will change to a point in time recognition. The Company currently estimates that gross revenues of approximately \$3,000, that would have otherwise been reflected in the consolidated statement of operations in future years, will be recorded in equity as part of a cumulative effect adjustment, and will increase retained earnings by approximately \$2,370, net of taxes, when we adopt Topic 606 as of January 1, 2018. The new standard also requires enhanced disclosures related to the disaggregation of revenue, information about contract balances, and other disclosures about contracts with customers, including revenue recognition policies to identify performance obligations and significant judgments in measurement and recognition. The estimated impact of adopting Topic 606 is based on the Company's best estimates at the time of the preparation of this Annual Report Form 10-K. The actual impact is subject to change and completion of the analysis prior to the first quarter 2018 Form 10-Q filing.

#### (1) Property, Plant and Equipment

Property, plant and equipment at December 31, 2017 and 2016 consist of the following:

	2017	2016	Estimated useful lives
Land	\$2,458	\$2,458	
Buildings and improvements	16,678	15,515	10 to 30 years
Machinery and equipment	107,722	102,146	3 to 15 years
Office furniture, fixtures and equipment	4,925	5,016	3 to 10 years
Automotive equipment	735	387	3 to 6 years
Construction in progress	1,917	8,047	
Total gross value	134,435	133,569	
Less accumulated depreciation	(85,114 )	(83,274 )	
Total net value	\$49,321	\$50,295	

For the years ended December 31, 2017, 2016, and 2015, the Company's aggregate depreciation expense related to property and equipment was \$8,154, \$8,307, and \$8,953, respectively. For the years ended December 31, 2017, 2016, and 2015, the Company eliminated from assets and accumulated depreciation \$6,317, \$16,652 and \$549 of fully depreciated assets, respectively.

## (2) Long-Term Debt

Long-term debt of the Company at December 31, 2017 and 2016 is summarized as follows:

	2017	2016
Revolving line of credit(a)	\$78,425	\$41,400
Less debt issuance costs	(939 )	(449 )
	\$77,486	\$40,951

Principal payments on long-term debt at December 31, 2017 of \$78,425 are due in 2022.

a) As of June 30, 2017, AMVAC, the Company's principal operating subsidiary, as borrower, and affiliates (including the Company, AMVAC CV and AMVAC BV), as guarantors and/or borrowers, entered into a Third Amendment to Second Amended and Restated Credit Agreement (the "Credit Agreement") with a group of commercial lenders led by Bank of the West (AMVAC's primary bank) as agent, swing line lender and Letter of Credit ("L/C") issuer. The Credit Agreement is a senior secured lending facility, consisting of a line of credit of up to \$250,000, an accordion feature of up to \$100,000 and a

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maturity date of June 30, 2022. The Credit Agreement contains two key financial covenants; namely, borrowers are required to maintain a Consolidated Funded Debt Ratio of no more than 3.25-to-1 and a Consolidated Fixed Charge Covenant Ratio of at least 1.25-to-1. The Company's borrowing capacity varies with its financial performance, measured in terms of EBITDA, for the trailing twelve month period. Under the Credit Agreement, revolving loans bear interest at a variable rate based, at borrower's election with proper notice, on either (i) LIBOR plus the "Applicable Rate" which is based upon the Consolidated Funded Debt Ratio ("Eurocurrency Rate Loan") or (ii) the greater of (x) the Prime Rate, (y) the Federal Funds Rate plus 0.5%, and (z) the Daily One-Month LIBOR Rate plus 1.00%, plus, in the case of (x), (y) or (z) the Applicable Rate ("Alternate Base Rate Loan"). Interest payments for Eurocurrency Rate Loans are payable on the last day of each interest period (either one, two, three or six months, as selected by the borrower) and the maturity date, while interest payments for Alternate Base Rate Loans are payable on the last business day of each month and the maturity date.

At December 31, 2017, according to the terms of the Credit Agreement and based on our performance against the most restrictive covenants listed above, the Company had the capacity to increase its borrowings by up to \$139,241. This compares to an available borrowing capacity of \$104,853 as of December 31, 2016. The level of borrowing capacity is driven by three factors: (1) our financial performance, as measured in EBITDA for trailing twelve month period, which has improved, (2) the inclusion of proforma EBITDA related to acquisitions completed during 2017 and (3) the leverage covenant (being the number of times EBITDA the Company may borrow under its credit facility agreement).

Substantially all of the Company's assets are pledged as collateral under the Credit Agreement. The Company was in compliance with all its debt covenants as of December 31, 2017.

The Company has various loans in place that together constitute the loan balances shown in the consolidated balance sheets at December 31, 2017 and December 31, 2016. The average amount outstanding on the senior secured revolving line of credit during the years ended December 31, 2017 and 2016 was \$51,103 and \$59,897, respectively. The weighted average interest rate on the revolving credit line during the years ended December 31, 2017, 2016, and 2015 was 3.0%, 2.3%, and 2.1% respectively.

## (3) Income Taxes

On December 22, 2017, the Tax Cuts and Jobs Act (the “Tax Reform Act”) was signed into law. The legislation significantly changes U.S. tax law by, among other things, lowering corporate income tax rate, implementing a territorial tax system and imposing a repatriation tax on deemed repatriated earnings of foreign subsidiaries. The Tax Reform Act reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018. The SEC staff issued Staff Accounting Bulletin No. 118 (“SAB 118”) to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. A company may select between one of three scenarios to determine a reasonable estimate arising from the Tax Reform Act. Those scenarios are (i) a final estimate which effectively closes the measurement window; (ii) a reasonable estimate leaving the measurement window open for future revisions; and (iii) no estimate as the law is still being analyzed. The Company was able to provide a reasonable estimate for the revaluation of deferred taxes and the effects of the repatriation undistributed foreign subsidiary earnings and profits. As a result of the reduction in the U.S. corporate income tax rate from 35% to 21% under the Tax Reform Act, the Company revalued its net deferred tax liabilities at December 31, 2017, resulting in a \$4,683 benefit included in the provision for income taxes for the year ended December 31, 2017. The Tax Reform Act also provided for a one-time deemed mandatory repatriation of Post-1986 E&P through the year ended December 31, 2017. As a result, the Company recognized a provisional \$1,250 charge in the provision for income taxes for the year ended December 31, 2017 related to the deemed mandatory repatriation. The Company continues to evaluate the various provisions of Tax Reform Act, including, the global intangible low-taxed income (“GILTI”) and the foreign derived intangible income (“FDII”) provisions. The ultimate impact of the Tax Reform Act may differ from these amounts, possibly materially, due to, among other things, additional analysis, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued, and any related actions the Company may take. The measurement period begins in the reporting period that includes the enactment date and ends when an entity has obtained, prepared, and analyzed the information that was needed in order to complete the accounting requirements under ASC Topic 740.

The provisions for income taxes are:

	2017	2016	2015
<b>Current:</b>			
Federal	\$2,124	\$5,136	\$573
State	1,347	(122 )	417
Foreign	570	655	991
<b>Deferred:</b>			
Federal	160	(1,345)	(319 )
State	242	1,216	347
	\$4,443	\$5,540	\$2,009

Total income tax expense differed from the amounts computed by applying the U.S. Federal income tax rate of 35.0% to income before income tax expense as a result of the following:

	2017	2016	2015
Computed tax expense at statutory federal rates	\$8,651	\$6,415	\$3,010

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Increase (decrease) in taxes resulting from:			
State taxes, net of federal income tax benefit	988	820	639
Domestic production deduction	(150 )	(1,272)	(179 )
Impact of the enactment of the Tax Cuts and Jobs Act (net)	(3,433)	—	—
Income tax credits	(431 )	(335 )	(662 )
Foreign tax rate differential	(1,503)	(1,587)	(1,590)
Subpart F income	3	14	9
Loss on equity investment	62	123	223
Stock based compensation	262	208	244
Tax interest	(22 )	920	—
Other	16	234	315
	\$4,443	\$5,540	\$2,009

Income before provision for income taxes and losses on equity investment are:

	2017	2016	2015
Domestic	\$18,931	\$12,513	\$1,589
Foreign	5,922	6,404	7,373
	\$24,853	\$18,917	\$8,962

Temporary differences between the financial statement carrying amounts and tax bases of assets and liabilities that give rise to significant portions of the net deferred tax liability at December 31, 2017 and 2016 relate to the following:

	2017	2016
Deferred tax asset		
Inventories	\$3,213	\$5,359
State income taxes	330	213
Program accrual	7,381	12,318
Vacation pay accrual	600	818
Accrued bonuses	1,073	2,072
Bad debt expense	12	6
Stock compensation	822	1,614
NOL carryforward	54	351
Tax credit	778	14
Other	381	2,707
Deferred tax asset	\$14,644	\$25,472
Deferred tax liability		
Plant and equipment, principally due to differences in		
depreciation and capitalized interest	\$29,986	\$30,636
Prepaid expenses	942	1,542
Deferred tax liability	30,928	32,178
Total net deferred tax liability	\$16,284	\$6,706

The following is a roll-forward of the Company's total gross unrecognized tax liabilities, not including interest and penalties, for the years ended December 31, 2017 and 2016:

	2017	2016
Balance at beginning of year	\$1,893	\$2,007
Additions for tax positions related to the current year	77	65
Additions for tax positions related to the prior year	—	86
Additions for tax positions related to new acquired businesses	1,766	—
Reduction for tax positions related to the prior year	(1,618)	(265)
Balance at end of year	\$2,118	\$1,893



The Company recognizes accrued interest and penalties related to unrecognized tax benefits in the provision for income taxes in the Company's consolidated financial statements. For the years ended December 31, 2017, 2016, and 2015 the Company had recognized approximately \$2,257, \$408, and \$335 respectively in interest and penalties related to unrecognized tax benefits accrued.

It is expected that the amount of unrecognized tax benefits will change within the next 12 months; however we do not expect the change to have a significant impact on our consolidated financial statements. At this time, an estimate of the range of the reasonable possible outcomes cannot be made.

The Company believes it is more likely than not that the deferred tax assets detailed in the table above will be realized in the normal course of business. It is the intent of the Company that undistributed earnings of foreign subsidiaries are permanently reinvested and, accordingly, no deferred liability for federal and state income taxes has been recorded. The amount of undistributed earnings was \$35,084 as of December 31, 2017. Upon distribution of earnings in the form of dividends or otherwise, the Company may still be subject to state income taxes and withholding taxes payable to the various foreign countries. Determination of the unrecognized deferred tax liability is not practical due to the complexities of a hypothetical calculation.

The Company has effectively settled its examination with the Internal Revenue Service (“IRS”) for the tax years ended December 31, 2012 through 2014. The Company’s 2015 and 2016 federal income tax returns are still subject to IRS examination. The Company has other state and foreign income tax returns that are subject to examination.

#### (4) Litigation and Environmental

##### A. DBCP Cases

Over the course of the past 30 years, AMVAC and/or the Company have been named or otherwise implicated in a number of lawsuits concerning injuries allegedly arising from either contamination of water supplies or personal exposure to 1, 2-dibromo-3-chloropropane (“DBCP®”). DBCP was manufactured by several chemical companies, including Dow Chemical Company, Shell Oil Company and AMVAC and was approved by the USEPA to control nematodes. DBCP was also applied on banana farms in Latin America. The USEPA suspended registrations of DBCP in October 1979, except for use on pineapples in Hawaii. That suspension was partially based on 1977 studies by other manufacturers that indicated a possible link between male fertility and exposure to DBCP among their factory production workers involved with producing the product.

At present, there are three domestic lawsuits and approximately 85 Nicaraguan lawsuits filed by former banana workers in which AMVAC has been named as a party. Only two of the Nicaraguan actions have actually been served on AMVAC. With respect to Nicaraguan matters, there was no change in status during 2017. As described more fully below, activity in domestic cases during 2017 is as follows. The one case remaining in Delaware includes 57 plaintiffs who have appealed a lower court finding that the matter was barred by the statute of limitations; this matter has been stayed pending a ruling by the Delaware Supreme Court on the question of when or if the statute of limitations has run out. In Hawaii, in the matter of *Patrickson, et. al. v. Dole Food Company*, following the appellate court’s remand to the trial court for adjudication in 2016, there has been no activity; while in Adams, there has been no activity since 2014, when the court granted dismissal of co-defendant Dole on the basis of a worker’s compensation bar and gave plaintiffs leave to amend their complaint in light of that ruling.

##### Nicaraguan Matters

A review of court filings in Chinandega, Nicaragua, has found 85 suits alleging personal injury allegedly due to exposure to DBCP and involving approximately 3,592 plaintiffs have been filed against AMVAC and other parties. Of these cases, only two – *Flavio Apolinar Castillo et al. v. AMVAC et al.*, No. 535/04 and *Luis Cristobal Martinez Suazo et al. v. AMVAC et al.*, No. 679/04 (which were filed in 2004 and involve 15 banana workers) – have been served on AMVAC. All but one of the suits in Nicaragua have been filed pursuant to Special Law 364, an October 2000 Nicaraguan statute that contains substantive and procedural provisions that Nicaragua’s Attorney General previously expressed as unconstitutional. Each of the Nicaraguan plaintiffs’ claims \$1 million in compensatory damages and \$5 million in punitive damages. In all of these cases, AMVAC is a joint defendant with Dow Chemical Company and Dole Food Company, Inc. AMVAC contends that the Nicaragua courts do not have jurisdiction over it and that Public Law 364 violates international due process of law. AMVAC has objected to personal jurisdiction and demanded under Law 364 that the claims be litigated in the United States. In 2007, the court denied these objections, and AMVAC appealed the denial. It is not presently known as to how many of these plaintiffs actually claim exposure to DBCP at the time AMVAC’s product was allegedly used nor is there any verification of the claimed injuries. Further, to date, plaintiffs have not had success in enforcing Nicaraguan judgments against domestic companies before U.S. courts. With respect to these Nicaraguan matters, AMVAC intends to defend any claim vigorously. Furthermore, the Company does not believe that a loss is either probable or reasonably estimable and has not recorded a loss contingency for these matters.

##### Delaware DBCP Cases

Abad Castillo and Marquinez. On or about May 31, 2012, two cases (captioned Abad Castillo and Marquinez) were filed with the United States District Court for the District of Delaware (USDC DE No. 1:12-CV-00695-LPS) involving claims for physical injury arising from alleged exposure to DBCP over the course of the late 1960's through the mid-1980's on behalf of 2,700 banana plantation workers from Costa Rica, Ecuador, Guatemala, and Panama. Defendant Dole brought a motion to dismiss 22 plaintiffs from Abad Castillo on the ground that they were parties in cases that had been filed by HendlerLaw, P.C. in Louisiana. On September 19, 2013, the appeals court granted, in part, and denied, in part, the motion to dismiss, holding that 14 of the 22 plaintiffs should be dismissed. On May 27, 2014, the district court granted Dole's motion to dismiss the matter without prejudice on the ground that the applicable statute of limitations had expired in 1995. Then, on August 5, 2014, the parties stipulated to summary judgment in favor of defendants (on the same ground as the earlier motion) and the court entered judgment in the matter. Plaintiffs were given an opportunity to appeal; however, only 57 of the 2,700 actually entered an appeal. Thus, at this stage, only 57 plaintiffs remain in the action. On or about June 18, 2017, the Third Circuit Court submitted a certified question of law to the Delaware Supreme Court on the question of when the tolling period ended. The Delaware Supreme Court heard oral argument on January 17, 2018 and is expected

to issue a ruling within 90 days. During the pendency of this question, these matters will be effectively stayed. At any rate, the Company believes that a loss is neither probable nor reasonably estimable in these matters and has not recorded a loss contingency.

#### Hawaiian DBCP Matters

Patrickson, et. al. v. Dole Food Company, et al. In October 1997, AMVAC was served with two complaints in which it was named as a defendant, filed in the Circuit Court, First Circuit, State of Hawai'i and in the Circuit Court of the Second Circuit, State of Hawai'i (two identical suits) entitled Patrickson, et. al. v. Dole Food Company, et. al ("Patrickson Case") alleging damages sustained from injuries (including sterility) to banana workers caused by plaintiffs' exposure to DBCP while applying the product in their native countries. Other named defendants include: Dole Food Company, Shell Oil Company and Dow Chemical Company. After several years of law and motion activity, the court granted judgment in favor of the defendants based upon the statute of limitations on July 28, 2010. On August 24, 2010, the plaintiffs filed a notice of appeal. On October 21, 2015, the Hawai'i Supreme Court granted the appeal and overturned the lower court decision, ruling that the State of Hawai'i now recognizes cross-jurisdictional tolling, that plaintiffs filed their complaint within the applicable statute of limitations and that the matter is to be remanded to the lower court for further adjudication. No discovery has taken place in this matter, and, at this stage in the proceedings, the Company does not believe that a loss is either probable or reasonably estimable and, accordingly, has not recorded a loss contingency for this matter.

Adams v. Dole Food Company et al. On approximately November 23, 2007, AMVAC was served with a suit filed by two former Hawaiian pineapple workers (and their spouses), alleging that they had testicular cancer due to DBCP exposure; the action is captioned Adams v. Dole Food Company et al in the First Circuit for the State of Hawaii. Plaintiff alleges that they were exposed to DBCP between 1971 and 1975. AMVAC denies that any of its product could have been used at the times and locations alleged by these plaintiffs. Following the dismissal of Dole Food Company on the basis of the exclusive remedy of worker's compensation benefits, plaintiffs appealed the dismissal. The court of appeals subsequently remanded the matter to the lower court in February 2014, effectively permitting plaintiffs to amend their complaint to circumvent the workers' compensation bar. There has been no activity in the case since that time. The Company does not believe that a loss is either probable or reasonably estimable and has not recorded a loss contingency for this matter.

#### B. Other Matters

EPA FIFRA/RCRA Matter. On November 10, 2016, the Company was served with a grand jury subpoena out of the U.S. District Court for the Southern District of Alabama in which the U.S. Department of Justice ("DoJ") sought production of documents relating to the Company's reimportation of depleted Thimet containers from Canada and Australia. The Company has retained defense counsel and has substantially completed the production during the course of which it incurred approximately \$2,350 in legal costs and fees responding to this subpoena. During the third quarter of 2017, the Company received a request from DoJ to interview several individuals who may be knowledgeable of the matter. Those interviews are likely to take place during the second quarter of 2018. At this stage, DoJ has not made clear its intentions with regard to either its theory of the case or potential criminal or civil enforcement. Thus, it is too early to tell whether a loss is probable or reasonably estimable. Accordingly, the Company has not recorded a loss contingency on this matter.

Walker v. AMVAC. On or about April 10, 2017, the Company was served with a summons and complaint that had been filed with the United State District Court for the Eastern District of Tennessee under the caption Larry L. Walker v. AMVAC (as No. 4:17-cv-00017). Plaintiff seeks contract damages, correction of inventorship, accounting and injunctive relief arising from for the Company's alleged misuse of his confidential information to support a patent application (which was subsequently issued) for a post-harvest corn herbicide that the Company has not

commercialized. Plaintiff claims further that he, not the Company, should be identified as the inventor in such application. The Company believes that these claims are without merit and intends to defend vigorously. On May 24, 2017, the Company filed a motion to dismiss this action, or in the alternative, for transfer of venue, on the ground that (i) the complaint fails to state claim upon which relief can be granted, (ii) the contracts cited by plaintiff in his complaint include a forum selection clause requiring that disputes are to be adjudicated in the U.S. District Court for the Central District of California, and (iii) the doctrine of forum non conveniens applies. The District Court in Tennessee has yet to rule on the motion. At this stage in the proceedings, it is too early to determine whether a loss is probable or reasonably estimable; accordingly, the Company has not recorded a loss contingency.

Harold Reed v. AMVAC et al. During January 2017, the Company was served with two Statements of Claim that had been filed on March 29, 2016 with the Court of Queen's Bench of Alberta, Canada (as case numbers 160600211 and 160600237) in which plaintiffs Harold Reed (an applicator) and 819596 Alberta Ltd. dba Jem Holdings (an application equipment rental company) allege physical injury and damage to equipment, respectively, arising from a fire that occurred during an application of the Company's potato sprout inhibitor, SmartBlock, at a potato storage facility in Coaldale, Alberta on April 2, 2014. Plaintiffs allege, among other things, that AMVAC was negligent and failed to warn them of the risks of such application. Reed seeks damages of \$250 for pain and suffering, while Jem Holdings seeks \$60 in lost equipment; both plaintiffs also seek unspecified damages as well. Also during

January 2017, the Company received notice that four related actions relating to the same incident were filed with the same court: (i) Van Giessen Growers, Inc. v Harold Reed et al (No. 160303906)(in which grower seeks \$400 for loss of potatoes); (ii) James Houweling et al. v. Harold Reed et al. (No. 160104421)(in which equipment owner seeks damages for lost equipment); (iii) Chin Coulee Farms, etc. v. Harold Reed et al. (No. 150600545)(in which owner of potatoes and truck seeks \$530 for loss thereof); and (iv) Houweling Farms v. Harold Reed et al. (No. 15060881)(in which owner of several Quonset huts seeks damages for lost improvements, equipment and business income equal to \$4,300). The Company was subsequently named as cross-defendant in those actions by Reed. During the third quarter of 2017, counsel for the Company filed a Statement of Defence (the Canadian equivalent of an answer), alleging that Reed was negligent in his application of the product and that the other cross-defendants were negligent for using highly flammable insulation and failing to maintain sparking electrical fixtures in the storage units affected by the fire. The Company believes that the claims against it in these matters are without merit and intends to defend them vigorously. At this stage in the proceedings, however, it is too early to determine whether a loss is probable or reasonably estimable; accordingly, the Company has not recorded a loss contingency.

Galvan v. AMVAC In an action entitled Graciela Galvan v. AMVAC filed on April 7, 2014 with the Superior Court for the State of California for the County of Orange (No. 00716103CXC), plaintiff, a former employee, alleges violations of wages and hours requirements under the California Labor Code. The Company completed the deposition of putative class representative and participated in mediation on the matter. In February 2016, the court granted plaintiff's motion for class certification with respect to only one of the seven original claims (namely, that allegedly discretionary bonus payments made to class members during the subject period should have been taken into account when calculating overtime). The Company believes that such bonus payments were discretionary and, as such, were properly excluded from overtime calculations. Nevertheless, in the interest of saving defense costs, the Company engaged in settlement discussions with plaintiff's counsel over the course of several months. During the third quarter of 2016, the Company recorded a loss contingency to cover the estimated amount of settlement. During December 2016, the parties reached agreement on terms of settlement, and, on February 9, 2018, the court gave its final approval to the terms of the class settlement. The settlement was not material to the Company's consolidated financial statements and the Company is to provide the court with a report of administration of the settlement proceeds to the class in August 2018, after which the Company expects that the matter will be dismissed with prejudice.

#### (5) Employee Deferred Compensation Plan and Employee Stock Purchase Plan

The Company maintains a deferred compensation plan ("the Plan") for all eligible employees. The Plan calls for each eligible employee, at the employee's election, to participate in an income deferral arrangement under Internal Revenue Code Section 401(k). The plan allows eligible employees to make contributions which cannot exceed 100% of compensation, or the annual dollar limit set by the Internal Revenue Code. The Company matches the first 5% of employee contributions. The Company's contributions to the Plan amounted to \$1,550, \$1,258 and \$1,261 in 2017, 2016 and 2015, respectively.

During 2001, the Company's Board of Directors adopted the AVD Employee Stock Purchase Plan (the "ESPP Plan"). The Plan allows eligible employees to purchase shares of common stock through payroll deductions at a discounted price. An original aggregate number of approximately 1,000,000 shares of the Company's Common Stock, par value \$0.10 per share (subject to adjustment for any stock dividend, stock split or other relevant changes in the Company's capitalization) were allowed to be sold pursuant to the Plan, which is intended to qualify under Section 423 of the Internal Revenue Code. The Plan allows for purchases in a series of offering periods, each six months in duration, with new offering periods (other than the initial offering period) commencing on January 1 and July 1 of each year. The initial offering period commenced on July 1, 2001. Pursuant to action taken by the Company's Board of Directors in December 10, 2010, the expiration of the Plan was extended to December 31, 2013. The Plan was amended and restated on June 30, 2011 following stockholders' ratification of the extended expiration date. In December 2013, the Board of Directors resolved to extend the expiration date of the Plan five years, that is, until December 31, 2018.

Under the Plan, as amended as of June 30, 2011, 995,000 shares of the Company's common stock were authorized. As of December 31, 2017, 2016, and 2015, 726,809, 760,825, and 803,555 shares, respectively, remained available under the plan. The expense recognized under the Plan was immaterial during the years ended December 31, 2017, 2016 and 2015, respectively.

Shares of common stock purchased through the Plan in 2017, 2016 and 2015 were 34,016, 42,730 and 50,452, respectively.

(6) Major Customers and International Sales

In 2017, there were three companies that accounted for 13%, 10% and 10% of the Company's consolidated sales. In 2016, there were three companies that accounted for 15%, 11%, and 8% of the Company's consolidated sales. In 2015, there were three companies that accounted for 14%, 11% and 10% of the Company's consolidated sales.

The Company primarily sells its products to large distributors, buying cooperatives and groups and extends credit based on an evaluation of the customer's financial condition. The Company had three significant customers who each accounted for approximately

10%, 9% and 8% of the Company's receivables as of December 31, 2017. The Company had three significant customers who each accounted for approximately 15%, 11% and 8% of the Company's receivables as of December 31, 2016. The Company has long-standing relationships with its customers and the Company considers its overall credit risk for accounts receivables to be low.

International sales for 2017, 2016 and 2015 were as follows:

	2017	2016	2015
Asia	\$28,880	\$17,138	\$13,847
South and Central America	25,748	16,234	15,970
Mexico	16,030	16,690	17,096
Europe	10,700	14,519	12,350
Africa	7,893	7,111	8,622
Australia	4,334	3,735	4,158
Canada	4,083	3,690	1,585
Middle East	1,237	4,041	3,230
Other	—	101	437
	\$98,905	\$83,259	\$77,295

#### (7) Royalties

The Company has two licensing agreements that require minimum annual royalty payments. Those agreements related to the acquisition of certain products. The Company also has two other licensing arrangements in which royalty are paid based on percentage of annual sales. Certain royalty agreements contain confidentiality covenants. Royalty expenses were \$81, \$83 and \$111 for 2017, 2016 and 2015, respectively.

#### (8) Business and Product Acquisitions

During 2017, the Company completed acquisitions with a total combined purchase consideration, net of cash acquired of \$92,888 including cash paid at closing in the amount of \$81,896 and deferred consideration of \$10,992. At closing the Company recorded \$12,814 related to tax matters associated with the acquisitions. The purchase price has been allocated as follows: product registrations and product rights \$55,127, trade names and trademarks \$9,500, customer relationships and customer lists \$3,700, goodwill \$22,184, working capital \$14,679 and property, plant and equipment \$512. Included in the detail above, the amounts allocated related to the products acquired from The Andersons, Adama and Syngenta are completed as at December 31, 2017. During 2017, the Company incurred approximately \$937 of professional fees in connection with these transactions, which were expensed. Cash paid at closing was funded through our revolving line of credit.

The assessment of purchase price allocation related to OHP and AgriCenter are preliminary as at December 31, 2017 and will be completed during 2018. The purchase price allocations are based on information available to management at the time the consolidated financial statements were prepared and reflect the best estimate of fair value. The fair value allocations are subject to change, which may be significant. The goodwill consists largely of acquired workforce, tax related matters and expected synergies arising from the acquisition. With regard to goodwill, \$5,088 is expected to be deductible for income tax purposes, the balance is not expected to be deductible for income tax purposes.



The Company considers that the acquisitions completed during 2017 are immaterial to the accompanying consolidated financial statements individually and material in aggregate.

On January 13, 2017, the Company acquired from The Andersons, Inc. certain assets relating to proprietary formulations containing PCNB, chlorothalonil and propiconazole which are marketed under the name FFII and FFIII. The acquired assets included end use registrations. The acquired products were included in the Company's consolidated statement of operations from the date of acquisition.

On June 6, 2017, Amvac completed an acquisition of certain assets relating to the abamectin, chlorothalonil and paraquat product lines from a group of companies, including Adama Agricultural Solutions, Ltd. The consideration for the acquired assets was paid in cash and has been allocated to intangible assets and inventory. The acquired products were included in the Company's consolidated statement of operations from the date of acquisition.

On August 22, 2017, AMVAC BV, completed the acquisition of certain selective herbicides and contact fungicides including chlorothalonil, ametryn, and isopyrazam, sold in the Mexican agricultural market. The assets were purchased from Syngenta AG.

The consideration for the acquired assets was paid in cash and has been allocated to intangible assets and inventory. The acquired products were included in the Company's consolidated statement of operations from the date of acquisition.

On October 2, 2017, the Company acquired substantially all of the assets of OHP, resulting in OHP becoming a wholly owned subsidiary of the Company whereby the Company gained greater access to distribution in the U.S. ornamental market. OHP is a leading provider of technology based pesticide solutions for greenhouse and nursery production applications throughout the United States and Puerto Rico. The consideration for the acquired assets was paid in cash and has been preliminarily allocated to working capital, property, plant and equipment, intangible assets, inventory and goodwill. The acquired business was included in the Company's consolidated statement of operations from the date of acquisition.

On October 27, 2017, AMVAC BV acquired 100% ownership in AgriCenter whereby the Company gained significant access and distribution to the Central American market. AgriCenter is centralized in Costa Rica with offices in six other Central American and Caribbean countries. AgriCenter is an agrochemical distribution company providing a range of services including bringing generic produced product as well as its own branded products to growers. The consideration for the acquired assets was paid in cash and has been preliminarily allocated to working capital, property, plant and equipment, intangible assets, inventory and goodwill. The acquired business was included in the Company's consolidated statement of operations from the date of acquisition.

The following unaudited pro forma information presents a summary of the Company's combined results of operations for the years ended December 31, 2017 and 2016, as if the business acquisitions had occurred on January 1, 2016. The following pro forma financial information is not necessarily indicative of the results of operations as they would have been had the transaction been effected on the assumed date, nor is it necessarily an indication of trends in future results for a number of reasons. Consequently, actual results will differ from the unaudited pro forma financial information.

	Year ended	
	December 31	
	2017	2016
Pro forma net sales	\$458,793	\$433,756
Pro forma net income	24,540	17,614
Pro forma earnings per common share – basic	0.84	0.61
Pro forma earnings per common share – assuming dilution	0.83	0.60

## (9) Intangible Assets and Goodwill

The following schedule represents intangible assets recognized in connection with product acquisitions (See description of Business, Basis of Consolidation and Significant Accounting Policies for the Company's accounting policy regarding intangible assets):

	Amount
Intangible assets at December 31, 2014	\$ 100,211
Additions during fiscal 2015	36,667
Write offs during fiscal 2015	(33 )
Impact of movement in exchange rates	(197 )
Amortization expense	(7,488 )
Intangible assets at December 31, 2015	129,160
Additions during fiscal 2016	224
Write offs during fiscal 2016	(78 )
Impact of movement in exchange rates	69
Amortization expense	(7,942 )
Intangible assets at December 31, 2016	121,433
Additions during fiscal 2017	68,327
Impact of movement in exchange rates	(6 )
Amortization expense	(8,804 )
Intangible assets at December 31, 2017	\$ 180,950
Goodwill at December 31, 2016	—
Additions during fiscal 2017	22,184
Goodwill at December 31, 2017	\$ 22,184
Intangible assets and goodwill at December 31, 2017	\$ 203,134

The following schedule represents the gross carrying amount and accumulated amortization of intangible assets and goodwill. Product rights and trademarks are amortized over their expected useful lives of 25 years. Customer lists are amortized over their expected useful lives of ten years.

	2017			2016		
	Gross	Accumulated Amortization	Net Book Value	Gross	Accumulated Amortization	Net Book Value
\$000's						
Product Rights	\$ 223,022	\$ 70,701	\$ 152,321	\$ 167,906	\$ 63,141	\$ 104,765
Trademarks	27,541	4,233	23,308	18,041	3,411	14,630
Customer Lists	6,791	1,470	5,321	3,091	1,053	2,038

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Goodwill	22,184	—	22,184	—	—	—
Total intangibles and goodwill	\$279,538	\$ 76,404	\$203,134	\$189,038	\$ 67,605	\$121,433

The following schedule represents future amortization charges related to intangible assets:

Year ending December 31,	
2018	\$10,732
2019	10,732
2020	10,784
2021	10,675
2022	10,554
Thereafter	127,473
	\$180,950

The following schedule represents the Company's obligations under acquisitions and licensing agreements:

	Amount
Obligations under acquisition agreements at December 31, 2014	\$2,492
Additional obligations acquired	1,367
Adjustment to deferred liabilities	65
Amortization of discounted liabilities	135
Payments on existing obligations	(2,524)
Obligations under acquisition agreements at December 31, 2015	1,535
Additional obligations acquired	224
Adjustment to deferred liabilities	(22)
Amortization of discounted liabilities	38
Payments on existing obligations	(960)
Obligations under acquisition agreements at December 31, 2016	815
Additional obligations acquired	10,992
Adjustment to deferred liabilities	(223)
Amortization of discounted liabilities	109
Payments on existing obligations	(26)
Obligations under acquisition agreements at December 31, 2017	\$11,667

As of December 31, 2017, the \$11,667 in remaining obligations under product acquisitions and licensing agreements is included in other liabilities.

#### (10) Commitments

The Company has various lease agreements for offices as well as long-term ground leases for its facilities at Axis, AL, Hannibal, MO and Marsing, ID. The office leases contain provisions to pass through to the Company its pro-rata share of certain of the building's operating expenses. The long-term ground lease at Axis, AL is for twenty years (commencing May 2001) with up to five automatic renewals of three years each for a total of thirty-five years. The long-term ground lease at Hannibal, MO is for a period of 20 years (commencing December 2007) with automatic one year extensions thereafter, subject to termination with a twelve-month notice. At its Marsing facility, the Company owns 15 acres and holds a long-term ground lease on two acres for a period of 25 years (commencing in March 2008). Rent expense for the years ended December 31, 2017, 2016 and 2015 was \$1,102, \$946 and \$947. In addition, the Company has various vehicle lease agreements for its sales force. Vehicle lease expense for the years ended December 31, 2017, 2016 and 2015 was \$529, \$555, and \$435 respectively.

Future minimum lease payments under the terms of the leases are as follows:

Year ending December 31, 2018	\$2,250
----------------------------------	---------

2019	1,938
2020	1,660
2021	1,103
2022	521
Thereafter	650
	\$8,122

(11) Research and Development

Research and development expenses which are included in operating expenses were \$8,455, \$6,998 and \$6,337 for the years ended December 31, 2017, 2016 and 2015, respectively.

(12) Equity Plan Awards

Under the Company's Equity Incentive Plan of 1993, as amended ("the Plan"), all employees are eligible to receive non-assignable and non-transferable restricted stock, options to purchase common stock, and other forms of equity. As of December 31, 2017, the number of securities remaining available for future issuance under the Plan is 2,000,579.

Incentive Stock Option Plans ("ISOP")

Under the terms of the Company's ISOP, under which options to purchase common stock can be issued, all employees are eligible to receive non-assignable and non-transferable options to purchase shares. The exercise price of any option may not be less than the fair market value of the shares on the date of grant; provided, however, that the exercise price of any option granted to an eligible employee owning more than 10% of the outstanding common stock may not be less than 110% of the fair market value of the shares underlying such option on the date of grant. No options granted may be exercisable more than ten years after the date of grant.

In 2017, 2016 and 2015, no options were granted.

Option activity within each plan is as follows:

	Incentive Stock Option Plans	Exercisable	
		Weighted Average Price Per Share	Weighted Average Price Per Share
Balance outstanding, December 31, 2014	724,904	\$ 9.22	\$ 7.82
Options exercised,	(63,950 )	\$ 7.50	
Options forfeited,	(34,109 )	12.00	
Balance outstanding, December 31, 2015	626,845	\$ 9.25	\$ 7.73
Options exercised,	(58,900 )	\$ 7.50	
Options forfeited,	(26,040 )	11.49	
Balance outstanding, December 31, 2016	541,905	\$ 9.33	\$ 7.97
Options exercised,	(55,979 )	\$ 8.37	
Options forfeited,	(13,143 )	11.49	
Balance outstanding, December 31, 2017	472,783	\$ 9.38	\$ 9.38

Information relating to stock options at December 31, 2017 summarized by exercise price is as follows:

Exercise Price Per Share	Outstanding Shares	Weighted Average Remaining Exercise	Exercisable	
			Weighted Average Shares	Weighted Average Exercise

		Life		Price		Price
			(Months)			
<b>Incentive Stock Option Plan:</b>						
\$7.50	249,050	35		\$ 7.50	249,050	\$ 7.50
\$11.32-\$14.75	223,733	82		\$ 11.48	223,733	\$ 11.48
	472,783	57		\$ 9.38	472,783	\$ 9.38

During 2017, 2016 and 2015, the Company recognized stock-based compensation expense related to incentive stock options of \$345, \$354, and \$431, respectively.



The weighted average exercise prices for options granted and exercisable and the weighted average remaining contractual life for options outstanding as of December 31, 2017 and 2016 was as follows:

		Weighted	Weighted	Remaining	Intrinsic
		Average	Average	Contractual	Value
	Number	Exercise	Life	(Months)	(thousands)
	of	Price			
	Shares				
As of December 31, 2017:					
Incentive Stock Option Plans:					
Outstanding	472,783	\$ 9.38	57		\$ 4,853
Vested	472,783	\$ 9.38	57		\$ 4,853
Exercisable	472,783	\$ 9.38	57		\$ 4,853
As of December 31, 2016:					
Incentive Stock Option Plans:					
Outstanding	541,905	\$ 9.33	67		\$ 5,321
Expected to Vest	536,531	\$ 9.31	67		\$ 5,280
Exercisable	332,684	\$ 7.97	49		\$ 3,719

The total intrinsic value of options exercised during 2017, 2016 and 2015 was \$545, \$493, and \$361, respectively. Cash received from stock options exercised during 2017, 2016, and 2015 was \$468, \$442, and \$480, respectively.

#### Nonstatutory Stock Options (“NSSO”)

The Company did not grant any non-statutory stock options during the three years ended December 31, 2017. There are 16,333 shares of options outstanding for year ended December 31, 2017.

#### Common Stock Grants

During 2017, the Company issued a total of 290,977 shares of common stock to certain employees and non-executive board members. Of these, 26,820 shares vest immediately, 1,300 shares will vest one-half each year on the anniversaries of the employee’s employment date, 1,782 shares will vest two years from the employee’s employment date, and the balance will cliff vest after three years of service. The fair values of the grants range from \$14.92 to \$19.90 per share based on the publicly traded share prices at the date of grants. The total fair value of \$4,726 is being recognized over the vesting period, which is representative of the related service periods. During 2017, 20,815 shares of common stock granted to employees were forfeited.

During 2016, the Company issued a total of 150,009 shares of common stock to certain employees and non-executive board members. Of these, 21,139 shares vest immediately, 2,600 shares will vest one-half each year on the anniversaries of the employee’s employment date, 3,000 shares will vest two years from the employee’s employment

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date, and the balance will cliff vest after three years of service. The fair values of the grants range from \$15.08 to \$17.35 per share based on the publicly traded share prices at the date of grants. The total fair value of \$2,283 is being recognized over the vesting period, which is representative of the related service periods. During 2016, 35,615 shares of common stock granted to employees were forfeited.

A status summary of non-vested shares as of December 31, 2017 and 2016, are presented below:

	December 31, 2017		December 31, 2016	
	Weighted		Weighted	
	Average		Average	
	Grant		Grant	
	Number	Date Fair	Number	Date Fair
	of Shares	Value	of Shares	Value
Nonvested shares at January 1 <sup>st</sup>	324,756	\$ 14.75	362,841	\$ 20.43
Granted	290,977	16.24	150,009	15.22
Vested	(203,165)	15.14	(152,479)	15.19
Forfeited	(20,815 )	15.29	(35,615 )	18.89
Nonvested shares at December 31 <sup>st</sup>	391,753	\$ 15.63	324,756	\$ 14.75

During 2017, 2016 and 2015, the Company recognized stock-based compensation expense related to restricted shares of \$2,705, \$1,630, and \$2,972, respectively.

#### Performance Based Stock Grants

During the year ended December 31, 2017, the Company issued a total of 128,594 performance based shares to employees. The shares granted during 2017 have an average fair value of \$15.43. The fair value was determined by using the publicly traded share price as of the date of grant. The Company will recognize as expense the value of the performance based shares over the required service period from grant date. The shares will cliff vest on February 8, 2020 with a measurement period commencing January 1, 2017 and ending December 31, 2019. Eighty percent of these performance based shares are based upon the financial performance of the Company, specifically, an earnings before income taxes (“EBIT”) goal weighted at 50% and a net sales goal weighted at 30%. The remaining 20% of performance based shares are based upon AVD stock price appreciation over the same performance measurement period. The EBIT and net sales goals measure the relative growth of the Company’s EBIT and net sales for the performance measurement period, as compared to the median growth of EBIT and net sales for an identified peer group. The stockholder return goal measures the relative growth of the fair market value of the Company’s stock price over the performance measurement period, as compared to that of the Russell 2000 Index and the median fair market value of the common stock of the comparator companies, identified in the Company’s 2016 Proxy Statement. All parts of these awards vest in three years, but are subject to reduction to a minimum (or even zero) for recording less than the targeted performance and to increase to a maximum of 200% for achieving in excess of the targeted performance.

On January 6, 2016, the Company granted a total of 52,170 performance based shares that will cliff vest on January 6, 2019 with a measurement period commencing January 1, 2016 through December 31, 2018, provided that the participating employees are continuously employed by the Company during the vesting period. Eighty percent of these performance based shares are based upon financial performance of the Company, specifically, an earnings before income tax (“EBIT”) goal weighted at 50% and a net sales goal weighted at 30%. The remaining 20% of performance based shares are based upon AVD stock price appreciation over the same performance measurement period. The EBIT and net sales goals measure the relative growth of the Company’s EBIT and net sales for the performance measurement period, as compared to the median growth of EBIT and net sales for an identified peer group. The stockholder return goal measures the relative growth of the fair market value of the Company’s stock price over the performance measurement period, as compared to that of the Russell 2000 Index and the median fair market value of the common stock of the comparator companies, identified in the Company’s 2016 Proxy Statement. All parts of these awards vest in three years, but are subject to reduction to a minimum (or even zero) for meeting less than the targeted performance and to increase to a maximum of 200% for meeting in excess of the targeted performance.

During 2015, the Company granted a total of 10,696 performance based shares. Of these, 7,500 shares will cliff vest on January 5, 2018 with a measurement period commencing January 1, 2015 and ending December 31, 2017 and 3,196 shares will cliff vest on August 1, 2018 with a measurement period commencing July 1, 2015 and ending June 30, 2018, provided that the participating employees are continuously employed by the Company during the vesting period. Eighty percent of these performance based shares are based upon financial performance of the Company, specifically, an earnings before income tax (“EBIT”) goal weighted at 50% and a net sales goal weighted at 30%. The remaining 20% of performance based shares are based upon AVD stock price appreciation over the same performance measurement period. The EBIT and net sales goals measure the relative growth of the Company’s EBIT and net sales for the performance measurement period, as compared to the median growth of EBIT and net sales for an identified peer group. The stockholder return goal measures the relative growth of the fair market value of the Company’s stock price over the performance measurement period, as compared to that of the Russell 2000 Index and the median fair market value of the common stock of the comparator companies, identified in the Company’s 2015

Proxy Statement. All parts of these awards vest in three years, but are subject to reduction to a minimum (or even zero) for meeting less than the targeted performance and to increase to a maximum of 200% for meeting in excess of the targeted performance.

As of December 31, 2017, the performance based shares related to EBIT and net sales have an average fair value of \$16.10 per share. The fair value was determined by using the publicly traded share price as of the date of grant. The performance based shares related to the Company's stock price have an average fair value of \$12.60 per share. The fair value was determined by using the Monte Carlo valuation method. For awards with performance conditions, the Company recognizes share-based compensation cost on a straight-line basis for each performance criteria over the implied service period.

As of December 31, 2016, the performance based shares related to EBIT and net sales have an average fair value of \$15.08 per share. The fair value was determined by using the publicly traded share price as of the date of grant. The performance based shares related to the Company's stock price have an average fair value of \$11.63 per share. The fair value was determined by using the Monte Carlo valuation method. For awards with performance conditions, the Company recognizes share-based compensation cost on a straight-line basis for each performance criteria over the implied service period.

As of December 31, 2015, performance based shares related to EBIT and net sales have an average fair value of \$11.86 per share. The fair value was determined by using the publicly traded share price as of the date of grant. The performance based shares related to the Company's stock price have an average fair value of \$9.48 per share. The fair value was determined by using the Monte Carlo valuation method. For awards with performance conditions, the Company recognizes share-based compensation cost on a straight-line basis for each performance criteria over the implied service period.

During 2017, 2016 and 2015, the Company recognized stock-based compensation expense related to performance based shares of \$1,248, \$995, and \$329, respectively. In 2017, the Company assessed the likelihood of achieving the performance measures based on peer group information currently available for the performance based shares granted in 2015 and 2014. Based on the performance thus far, the Company has concluded that it is likely that the performance measure based on EBIT and net sales will be met at 200% of targeted performance and have recorded the related additional expense in 2016. The performance shares based on market price, however, are not expected to meet targeted performance and in that event, will be forfeited. Any forfeiture related to market condition shares are included in the grant date fair value valuation and no forfeitures were recognized in 2017.

As of December 31, 2017, the Company had approximately \$1,642 of unamortized stock-based compensation expenses related to unvested performance based shares. This amount will be recognized over the weighted-average period of 1.8 years. This projected expense will change if any performance based shares are granted or cancelled prior to the respective reporting periods or if there are any changes required to be made for estimated forfeitures.

A summary of non-vested shares as of December 31, 2017 and 2016, is presented below:

	December 31, 2017		December 31, 2016	
	Weighted		Weighted	
	Average		Average	
	Grant		Grant	
	Number	Date Fair	Number	Date Fair
	of	Value	of	Value
	Shares		Shares	
Nonvested shares at January 1 <sup>st</sup>	119,022	\$ 14.18	104,403	\$ 17.05
Granted	128,594	15.43	52,170	14.39
Vested	(48,046 )	14.92	—	—
Forfeited	(13,513 )	13.08	(37,551 )	22.45
Nonvested shares at December 31 <sup>st</sup>	186,057	\$ 14.93	119,022	\$ 14.18

#### Performance Incentive Stock Option Plan

For the three years ended December 31, 2017, the Company did not grant any employees performance incentive stock options to acquire shares of common stock.

Performance option activity is as follows:

		Exercisable	
	Incentive	Weighted	Weighted
	Stock	Average	Average
	Option	Price Per	Price
	Plans	Share	Per Share
Balance outstanding, December 31, 2015	98,410	\$ 11.49	\$ —
Options forfeited	(16,076 )	11.49	
Balance outstanding, December 31, 2016	82,334	\$ 11.49	\$ —
Options forfeited	(668 )	11.49	
Balance outstanding, December 31, 2017	81,666	\$ 11.49	\$ —

Information relating to performance stock options at December 31, 2017 is summarized by exercise price is as follows:

Exercise Price Per Share	Outstanding Weighted Average Remaining			Exercisable Weighted Average	
	Shares	Life (Months)	Exercise Price	Shares	Exercise Price
<b>Performance Incentive Stock Option Plan:</b>					
\$11.49	81,666	—	(1) \$ 11.49	—	\$ —
	81,666	—	\$ 11.49	—	\$ —

(1)The Incentive Stock Option awards have been totally vested on 12/31/2017. The remaining contractual term is 7 years for these awards.

The weighted average exercise price for performance options granted and exercisable and the weighted average remaining contractual life for performance options outstanding as of December 31, 2017 and 2016 was as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Remaining Contractual Life (Months)	Intrinsic Value (thousands)
<b>As of December 31, 2017:</b>				
<b>Performance Incentive Stock Option Plans:</b>				
Outstanding	81,666	\$ 11.49	—	\$ 666
Expected to Vest	81,666	\$ 11.49	—	\$ 666
Exercisable	—	\$ —	—	\$ —
<b>As of December 31, 2016:</b>				
<b>Performance Incentive Stock Option Plans:</b>				
Outstanding	82,334	\$ 11.49	12	\$ 631
Expected to Vest	75,312	\$ 11.49	12	\$ 577
Exercisable	—	\$ —	—	\$ —

During 2017, 2016 and 2015, the Company recognized stock-based compensation expense related to performance incentive stock options of \$416, \$188, and \$149, respectively. In 2017, the Company assessed the likelihood of achieving the performance measures based on peer group information currently available for the performance incentive stock options awarded in 2014. The Company has concluded that the performance measure based on EBIT will be met at 200% of targeted performance and net sales will be met at 200% of targeted performance and have recorded the related additional expense in 2017. While the performance incentive stock options based on market price is likely to be met at 200% targeted performance, no additional expenses were recognized in 2017 as the grant date valuation of these awards reflects market conditions.

### (13) Accumulated Other Comprehensive Loss

The following table lists the beginning balance, annual activity and ending balance of each component of accumulated other comprehensive loss:

	FX
	Translation
Balance, December 31, 2014	\$ (1,970 )
Other comprehensive loss before reclassifications	(1,571 )
Balance, December 31, 2015	(3,541 )
Other comprehensive loss before reclassifications	(1,310 )
Balance, December 31, 2016	(4,851 )
Other comprehensive loss before reclassifications	344
Balance, December 31, 2017	\$ (4,507 )



(14) Equity Method Investments

The Company utilizes the equity method of accounting with respect to its investment in TyraTech Inc. (“TyraTech”), a Delaware corporation that specializes in developing, marketing and selling pesticide products containing essential oils and other natural ingredients. For the years ended December 31, 2017, 2016 and 2015, the Company recognized losses of \$177, \$353, and \$636, respectively on its equity method investment. In November 2015, TyraTech issued 105,333,333 shares and raised approximately £3,200 (\$4,800, based on the exchange rate at the time). Due to the share issuance, the Company recognized a loss of \$7 (for 2015) from the dilution of the Company’s ownership position, as required by ASC 323. As of December 31, 2017 and 2016, the Company’s ownership position in TyraTech was approximately 15.11%. As a result of the reduced equity share, the Company re-assessed its choice of equity method accounting for the investment and determined that it retains significant influence by retaining one out of five board seats and accordingly, this method of accounting continues to be appropriate. At December 31, 2017, the carrying value of the Company’s investment in TyraTech was \$2,006 and the quoted market value based on TyraTech’s share price (Level 1 input) was \$1,970.

At December 31, 2017, the Company performed an impairment review of its investment in TyraTech and concluded that the current condition was temporary and consequently determined that no impairment charge was appropriate. TyraTech’s shares trade on the AIM market of the London Stock Exchange under the trading symbol ‘TYR’. The Company’s equity investment is included in other assets on the consolidated balance sheets.

At a special meeting conducted on December 27, 2017, TyraTech shareholders approved the sale of its Vamouse product line to Alliance Pharmaceuticals, Ltd and the use of some of the proceeds from such sale for a tender offer for TyraTech shares. That tender offer was concluded in January 2018. AMVAC elected not to exercise its right to sell into such tender offer and, as a result, the Company’s ownership interest in TyraTech increased to approximately 35% at the conclusion of that transaction.

On August 2, 2016, AMVAC BV entered into a joint venture with Huifeng. The new entity, Hong Kong JV, is intended to focus on activities such as market access and technology transfer between the two members. AMVAC BV is a 50% owner of the new entity. No material contributions were made to this joint venture in 2016.

On June 27, 2017, both AMVAC BV and Huifeng (Hong Kong) Ltd. made individual capital contributions of \$950 to the Hong Kong JV. As of December 31, 2017, the Company’s ownership position in the Hong Kong JV was 50%. The Company utilizes the equity method of accounting with respect to this investment. On July 7, 2017, the Hong Kong JV purchased the shares of Profeng Australia, Pty Ltd. (“Profeng”), for a total consideration of \$1,900. The purchase consists of Profeng Australia, Pty Ltd Trustee and Profeng Australia Unit Trust. Both Trust and Trustee were previously owned by Huifeng via its wholly owned subsidiary Huifeng (Hong Kong) Ltd. For the year ended December 31, 2017, the Company recognized income of \$128 as a result of the Company’s ownership position in the Hong Kong JV. There were no losses recognized in the prior year.

(15) Cost Method Investment

In February 2016, AMVAC BV made an equity investment in Biological Products for Agriculture (“Bi-PA”). Bi-PA develops biological plant protection products that can be used for the control of pests and disease of agricultural crops. As of December 31, 2017, the Company’s ownership position in Bi-PA was 15%. The Company utilizes the cost method of accounting with respect to this investment and will periodically review the investment for possible

impairment. There was no impairment on the investment as of December 31, 2017. The investment is not material and is recorded within other assets on the consolidated balance sheets.

## (16) Quarterly Data—Unaudited

	March 31	June 30	September 30	December 31
<b>Quarterly Data—2017</b>				
Net sales	\$70,673	\$77,905	\$ 89,975	\$116,494
Gross profit	30,084	34,335	38,032	44,941
Net income attributable to American Vanguard	3,452	4,304	4,089	8,429
Basic net income per share	0.12	0.15	0.14	0.29
Diluted net income per share	0.12	0.15	0.14	0.28
<b>Quarterly Data—2016</b>				
Net sales	\$69,474	\$72,724	\$ 82,447	\$87,468
Gross profit	27,503	31,395	32,986	36,404
Net income attributable to American Vanguard	2,794	3,246	2,877	3,871
Basic net income per share	0.10	0.11	0.10	0.13
Diluted net income per share	0.10	0.11	0.10	0.13

Note: Totals may not agree with full year amounts due to rounding and separate calculations each quarter.

## (17) Subsequent Event

There is no reportable subsequent event for the year ended December 31, 2017, as of the filing date of this Annual Report Form on 10-K that requires recognition or disclosure in our consolidated financial statements.