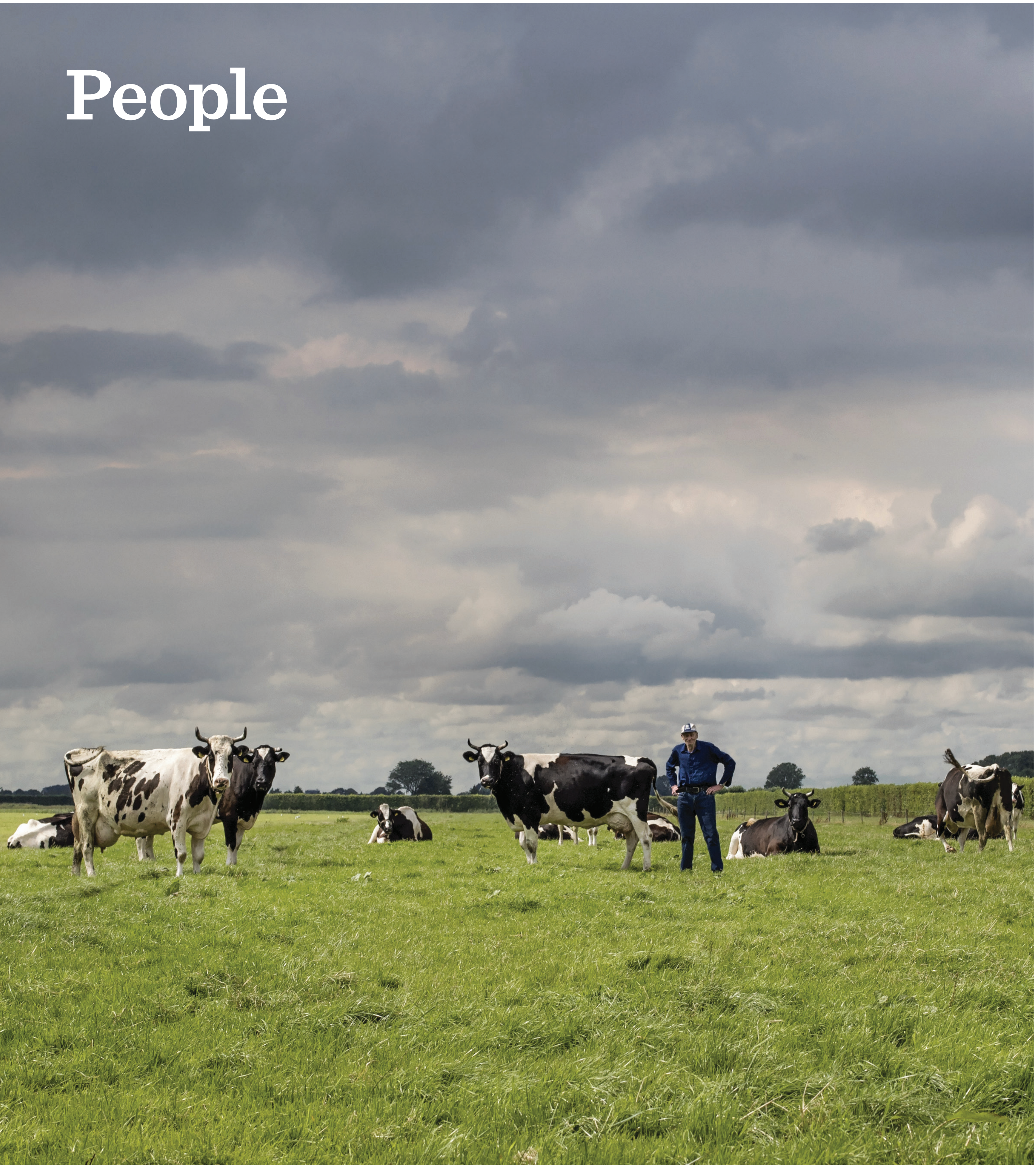
People

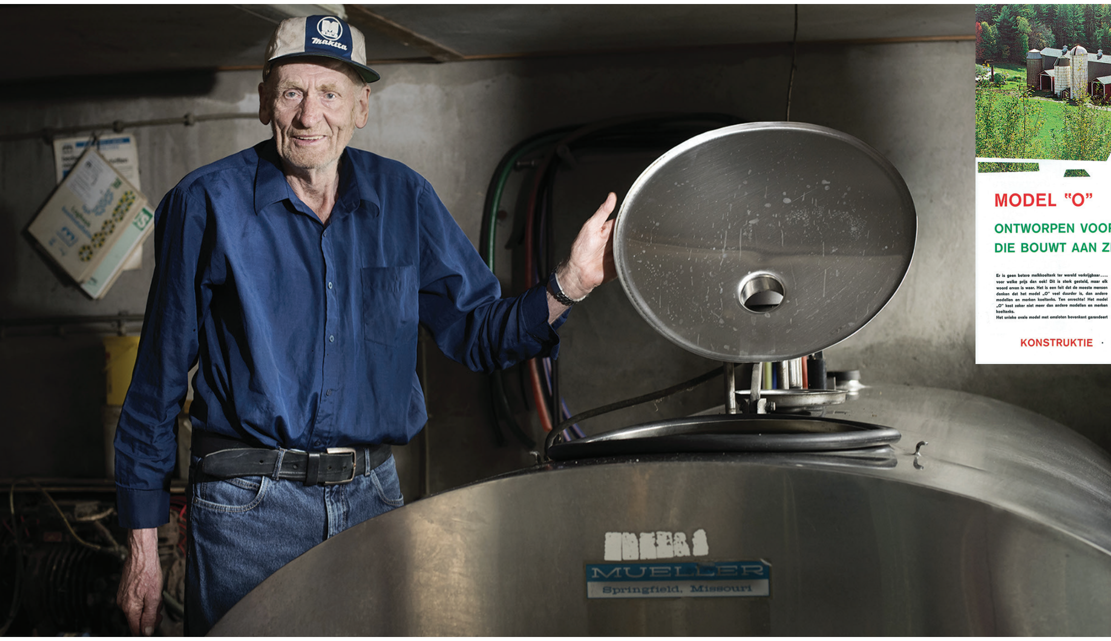


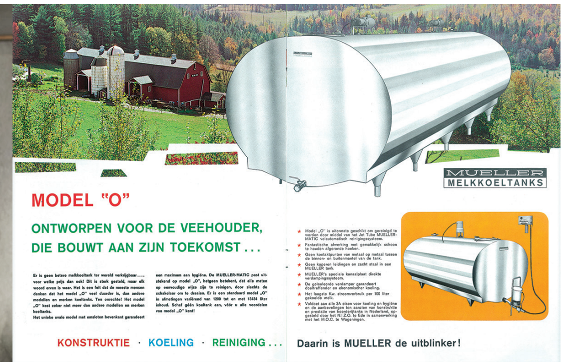
2018 PAUL MUELLER COMPANY ANNUAL REPORT

MUELLER

Dedicated *People*

**Our global company is powered by people.
The people we work with, side by side.
The people we serve. The people they serve.
Soon the numbers, but first the *people*.**





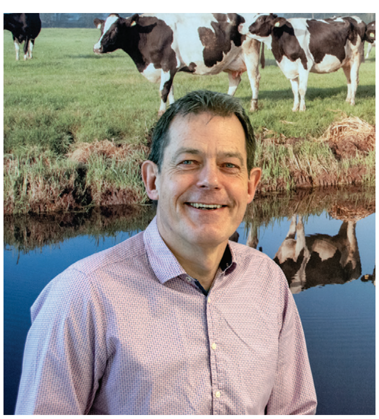
A Dutch brochure about Mueller Model "O" milk tanks, circa 1968.

Klaas Schermer with his 1968 Mueller milk tank.

Enduring *People*

We often hear that Paul Mueller Company equipment lasts a lifetime; now we have proof. The gentleman pictured above and on the front cover is 78-year-old Klaas Schermer. In 1968, Klaas and his father bought a Mueller® O-600 milk tank from Meko and had it installed on their farm in North Holland. At the time, Meko and Paul Mueller Company in Springfield, Missouri, had an import/export relationship, and the tank was built in Missouri and shipped to Holland. Klaas' milk tank still has the original Mueller decal on it!

The tank's electronic features are fairly bare-bones when compared with today's models. Klaas says the cooling equipment that came with it has rusted and is home to a number of spiders, but is still in perfect working order.



Mueller B.V. co-worker Ben Bulters.

Klaas has slowed down somewhat over the last 51 years and now milks 17 cows rather than 30, but plans to keep milking as long as he can.

Ben Bulters of Mueller B.V. in Groenlo, The Netherlands, keeps in touch with our service technicians who visit Klaas annually to do tank maintenance. "This is pretty much a museum piece," said Ben. "If a tank has lasted for 20 to 25 years for one and the same livestock farmer, that's unique in itself, let alone for 50 years!"

FINANCIAL HIGHLIGHTS

Operating Results for the Year

Amounts in thousands, except for share data and ratios.	2018	2017	2016
Net Sales	$ 201,210	$ 167,957	$ 168,021
Income Before Taxes	3,111	3,347	(3,243)
Provision for Income Taxes	472	5,673	(962)
Net Income (Loss)	$ 2,639	$ (2,326)	$ (2,281)
Earnings (Loss) Per Common Share:			
Basic	$ 2.21	$ (1.94)	$ (1.88)
Diluted	$ 2.21	$ (1.94)	$ (1.88)

Year-End Position

	2018	2017	2016
Total Assets	$ 130,188	$ 139,894	$ 104,665
Working Capital	$ 9,352	$ 12,621	$ 7,538
Current Ratio	1.20	1.25	1.20
Shareholders' Investment	$ 27,628	$ 27,981	$ 30,466
Book Value Per Share	$ 23.10	$ 23.39	$ 25.39
Common Shares Outstanding	1,196,187	1,196,261	1,200,021
Backlog – United States (Unaudited)	$ 83,587	$ 70,079	$ 35,746
Backlog – The Netherlands (Unaudited)	$ 13,767	$ 23,964	$ 8,495

Fellow Shareholders:

In 2018, the Company generated earnings of $2.64 million on revenue of $201 million, which was nearly 20% higher than the year before. Performance in the United States was strong. Revenue was up 14% to $137 million. Net income in the United States was $4.69 million after a tax adjusted LIFO expense of $1.51 million. In The Netherlands, revenue increased by more than 35% to $65.3 million, reducing the loss slightly to $(2.08) million. Having settled into the new facility and achieved this rate of production, we expect to continue reducing costs and return to profitability in 2019.

Looking at the United States in more detail, revenue increased by $16.7 million. Earnings before tax and LIFO increased by $1.81 million. Revenue was up in most product lines with the largest increases in our pharmaceutical product lines, BioPharm and PyroPure. These two product lines accounted for $11.9 million of the revenue increase. BioPharm successfully completed a large pharmaceutical module, which required the assistance of multiple product lines. Our Chemical, Beverage, and Food and Dairy product lines each contributed capacity to this effort. PyroPure saw strong demand for pure water equipment, such as multiple-effect stills and pure steam generators, due to the high level of activity in the pharmaceutical industry.

We begin 2019 with U.S. backlog nearly 20% higher than we began 2018. This backlog increase is primarily due to our BioPharm product line, which continues to see strong demand for vessels and modular projects. This product line again expects to use additional capacity from our other product lines in 2019. This collaboration has already begun on the current backlog. PyroPure's starting backlog is lower than it was at the beginning of 2018, but this product line expects to continue to receive strong order entry during the year, due to the conditions in the pharmaceutical industry. Dairy farm backlog has also increased. After adding capacity a few years ago by beginning milk cooler production in Springfield, this group will spend 2019 establishing a production line in Springfield for a standard farm milk silo, which was first exhibited at World Ag Expo in Tulare, California, this February. The milk silo exhibited at the show was expected to be permanently displayed at the show grounds, but was sold to a customer, as were an additional six silos, which are in the backlog, as we begin setting up the production line.

In The Netherlands, the move to the new building was more disruptive than we anticipated. Most of the planned severance and moving costs were expensed in 2017. However, in 2018 we incurred unexpected costs of correcting production processes in the new building, adding temporary workers to help with the transition, and some additional severance costs. With these costs identified, our budget for 2019 calls for a $4 million reduction in costs. However, we begin 2019 with a backlog that is $10.6 million lower than a year earlier. Part of the reduction in backlog is related to a large heat exchanger order shipped in 2018, which had low margins due to large material content. Excluding that order, backlog is down by more than $3 million. During 2019 we expect to replace some of this revenue with more traditional products with higher margins such as milk coolers and serving beer tanks. The resulting product mix and the budgeted cost reductions will be sufficient to return to profitability. During these difficulties we have been out of compliance with our loan covenants in The Netherlands. On the basis of these recovery plans and the contribution of additional cash from the United States, these covenant violations have been waived through March 31, 2020.

We look forward to 2019 as a year of execution. We have a strong backlog in the United States. The increase is mostly in our BioPharm product line and our focus is on managing this complicated work and efficiently shifting capacity between product lines. The focus in The Netherlands is on achieving the identified cost savings, realizing the efficiencies of the new plant, and generating additional sales of traditional products. We expect a profitable year in both countries.

David Moore

David Moore
President and CEO

March 18, 2019

Consolidated Statements of Operations for the Years Ended December 31, 2018, 2017, and 2016

Amounts in thousands, except for share data.	2018	2017	2016
Net Sales	$ 201,210	$ 167,957	$ 168,021
Cost of Sales	150,260	118,987	123,291
Gross profit	50,950	48,970	44,730
Selling, General, and Administrative Expenses	47,137	44,046	48,155
Operating income (loss)	3,813	4,924	(3,425)
Other Income (Expense):			
Interest income	177	7	–
Interest expense	(920)	(330)	(294)
Other, net	41	(1,254)	476
Total Other Income (Expense)	(702)	(1,577)	182
Income (loss) before provision (benefit) for income taxes	3,111	3,347	(3,243)
Provision (Benefit) for Income Taxes	472	5,673	(962)
Net Income (Loss)	$ 2,639	$ (2,326)	$ (2,281)
Earnings (Loss) Per Common Share:			
Basic	$ 2.21	$ (1.94)	$ (1.88)
Diluted	$ 2.21	$ (1.94)	$ (1.88)

The accompanying notes are an integral part of these consolidated statements.

Consolidated Statements of Comprehensive Income (Loss) for the Years Ended December 31, 2018, 2017, and 2016

Amounts in thousands.	2018	2017	2016
Net Income (Loss)	$ 2,639	$ (2,326)	$ (2,281)
Other Comprehensive Income (Loss), Net of Tax:			
Foreign currency translation adjustment	$ (1,659)	$ 4,061	$ (1,146)
Change in pension liability	(1,330)	(4,121)	3,238
Amortization of de-designated hedges	–	3	21
Comprehensive (Loss)	$ (350)	$ (2,383)	$ (168)

The accompanying notes are an integral part of these consolidated statements.

Consolidated Balance Sheets for the Years Ended December 31, 2018, 2017, and 2016

Amounts in thousands, except for share data.	2018	2017	2016
ASSETS			
Current Assets:			
Cash and cash equivalents	$ 715	$ 6,571	$ 357
Accounts receivable, less reserve for doubtful accounts of $693 for 2018, $558 for 2017, and $394 for 2016	27,533	22,680	18,084
Costs and estimated earnings in excess of billings	258	77	173
Inventories: Raw materials and components	9,468	10,752	6,361
Work-in-process	8,108	12,540	4,843
Finished goods	9,102	7,788	12,922
	26,678	31,080	24,126
Prepayments	1,808	2,442	1,983
Total current assets	56,992	62,850	44,723
Property, Plant, and Equipment:			
Land and land improvements	8,190	5,328	5,474
Buildings	27,772	17,886	18,083
Fabrication equipment	84,070	86,377	87,161
Transportation, office, and other equipment	16,925	17,722	20,288
Construction-in-progress	328	20,571	489
	137,285	147,884	131,495
Less: Accumulated depreciation	(86,586)	(96,298)	(97,950)
	50,699	51,586	33,545
Goodwill	14,539	15,195	13,554
Deferred Taxes	7,348	9,474	11,878
Other Assets	610	789	965
Total Assets	$ 130,188	$ 139,894	$ 104,665
LIABILITIES AND SHAREHOLDERS' INVESTMENT			
Current Liabilities:			
Short-term borrowings	$ 8,942	$ 2,717	$ 7,859
Current maturities of long-term debt	1,390	1,304	384
Accounts payable	11,177	14,242	8,165
Accrued expenses: Payroll and benefits	6,385	5,887	4,252
Vacations	960	1,058	1,195
Other	3,411	5,617	2,044
Advance billings	15,179	17,679	12,235
Billings in excess of costs and estimated earnings	196	1,725	1,051
Total current liabilities	47,640	50,229	37,185
Long-Term Pension Liabilities	32,081	34,766	31,628
Long-Term Debt, Less Current Maturities	21,478	23,562	4,558
Other Long-Term Liabilities	1,361	3,356	828
Total Liabilities	102,560	111,913	74,199
COMMITMENTS AND CONTINGENCIES			
Shareholders' Investment:			
Common stock, par value $1 per share – Authorized 20,000,000 shares – Issued 1,507,481 shares	1,508	1,508	1,508
Paid-in surplus	9,708	9,708	9,708
Retained earnings	61,895	59,256	61,582
	73,111	70,472	72,798
Less: Treasury stock – 311,294 shares for 2018, 311,220 shares for 2017, and 307,460 shares for 2016, at cost	(6,332)	(6,329)	(6,227)
Accumulated other comprehensive (loss)	(39,151)	(36,162)	(36,105)
Total Shareholders' Investment	27,628	27,981	30,466
Total Liabilities and Shareholders' Investment	$ 130,188	$ 139,894	$ 104,665

The accompanying notes are an integral part of these consolidated statements.

Consolidated Statements of Shareholders' Investment for the Years Ended December 31, 2018, 2017, and 2016

Amounts in thousands.	Common Stock	Paid-in Surplus	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total
Balance – December 31, 2015	$ 1,508	$ 9,708	$ 63,863	$ (5,114)	$ (38,218)	$ 31,747
Add (Deduct):						
Net (loss)	–	–	(2,281)	–	–	(2,281)
Other comprehensive income, net of tax	–	–	–	–	2,113	2,113
Treasury stock acquisition	–	–	–	(1,113)	–	(1,113)
Balance – December 31, 2016	1,508	9,708	61,582	(6,227)	(36,105)	30,466
Add (Deduct):						
Net (loss)	–	–	(2,326)	–	–	(2,326)
Other comprehensive (loss), net of tax	–	–	–	–	(57)	(57)
Treasury stock acquisition	–	–	–	(102)	–	(102)
Balance – December 31, 2017	1,508	9,708	59,256	(6,329)	(36,162)	27,981
Add (Deduct):						
Net income	–	–	2,639	–	–	2,639
Other comprehensive (loss), net of tax	–	–	–	–	(2,989)	(2,989)
Treasury stock acquisition	–	–	–	(3)	–	(3)
Balance – December 31, 2018	$ 1,508	$ 9,708	$ 61,895	$ (6,332)	$ (39,151)	$ 27,628

The accompanying notes are an integral part of these consolidated statements.

Consolidated Statements of Cash Flows for the Years Ended December 31, 2018, 2017, and 2016

Amounts in thousands.	2018	2017	2016
Cash Flows from Operating Activities:			
Net income (loss)	$ 2,639	$ (2,326)	$ (2,281)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Pension contributions (greater) less than expense	(4,015)	(984)	2,339
Bad debt expense (recovery)	161	28	(330)
Depreciation and amortization	5,794	5,747	6,179
(Gain) on sales of equipment	(164)	(46)	(22)
Deferred tax (benefit) expense	1,182	5,389	(1,256)
Other	–	(20)	(89)
Changes in assets and liabilities, net of effect of acquisitions –			
(Increase) decrease in accounts and notes receivable	(4,856)	(4,405)	4,491
(Increase) decrease in costs and estimated earnings in excess of billings	(182)	97	(121)
Decrease (increase) in inventories	4,402	(6,953)	7,361
Decrease (increase) in prepayments	2,000	(375)	285
(Increase) decrease in other assets	(57)	23	1
(Increase) decrease in deferred taxes	(422)	(1,315)	1,893
(Decrease) increase in accounts payable	(3,065)	5,797	(1,937)
(Decrease) increase in other accrued expenses	(1,805)	5,119	(2,469)
(Decrease) increase in advance billings	(2,500)	5,444	(1,920)
(Decrease) increase in billings in excess of costs and estimated earnings	(1,529)	674	(1,507)
(Decrease) increase in long-term liabilities	(1,997)	394	94
Net cash (required) provided by operating activities	(4,414)	12,288	10,711
Cash Flows (Requirements) from Investing Activities:			
Proceeds from sales of equipment	173	172	65
Additions to property, plant, and equipment	(4,838)	(23,750)	(4,284)
Acquisition of DEG Engineering GmbH	–	–	(2,606)
Net cash (required) by investing activities	(4,665)	(23,578)	(6,825)
Cash Flow Provisions (Requirements) from Financing Activities:			
Proceeds (repayment) of short-term borrowings	6,313	(4,747)	(2,448)
Long-term debt proceeds	6,137	19,255	–
Principal payments on long-term debt	(7,059)	(251)	(414)
Treasury stock acquisitions	(3)	(102)	(1,113)
Net cash provided (required) by financing activities	5,388	14,155	(3,975)
Effect of Exchange Rate Changes	(2,165)	3,349	(99)
Net (Decrease) Increase in Cash and Cash Equivalents	(5,856)	6,214	(188)
Cash and Cash Equivalents at Beginning of Year	6,571	357	545
Cash and Cash Equivalents at End of Year	$ 715	$ 6,571	$ 357

The accompanying notes are an integral part of these consolidated statements.

Notes to Consolidated Financial Statements

(1) Summary of Accounting Policies:

Principles of Consolidation and Lines of Business – The financial statements include the accounts of Paul Mueller Company and its wholly owned subsidiaries: Mueller Transportation, Inc.; Mueller Field Operations, Inc.; and Mueller B.V. and its subsidiaries (collectively "Company"). All significant intercompany balances and transactions have been eliminated in consolidation. The Company provides manufactured equipment and components for the food, dairy, beverage, chemical, pharmaceutical, and other industries, as well as the dairy farm market. The Company also provides field fabrication, service, repair, construction, and transportation services in these industries.

Joint Ventures – As part of the acquisitions made during 2008, Mueller B.V. acquired a 49% interest in DEG Engineering GmbH ("DEG"), a German engineering firm that designs and sells heat transfer equipment. The investment in DEG was originally accounted for using the equity method and was included in other assets on the Consolidated Balance Sheets, and the equity in the results was included in equity in income (loss) of joint ventures on the Consolidated Statements of Income. The Company routinely evaluates its equity-method investments for impairment and in 2011 the investment in DEG was written down to zero. During 2016, Mueller B.V. acquired the remaining 51% of DEG as described in Footnote 2.

Use of Estimates – The preparation of the consolidated financial statements, in conformity with generally accepted accounting principles, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

Revenue Recognition for 2018 – Net Sales reported on the statement of operations solely consists of revenue from customer contracts. Management has concluded that the Segment Data disaggregation of revenue provided in Footnote 9 also satisfies the revenue disaggregation disclosure requirement under Accounting Standards Update (ASU) No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." During the year ended December 31, 2018, there was $19,040,000 of revenue recognized that was included in the December 31, 2017, consolidated balance sheet as advance billings and billings in excess of costs and estimated earnings (contract liabilities).

Revenue from sales of fabricated products or services is recognized based upon the transfer of promised products or services to the customer in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those products or services. Transfer of the products or services may occur at the time of shipment from the Company's dock, at the time of delivery to the customer's location, when projects are completed in the field and accepted by the customer, or throughout the progress of the project dependent upon contract terms and exclusivity of the products or services. For each project, distinct products or services are identified as performance obligations and revenue is recognized appropriately for each performance obligation independently. The revenue allocated to each performance obligation will align with how the products and services that make up the performance obligation were quoted to the customer. In situations where the contract dictates that control transfers to the customer upon delivery, then freight is to be a fulfillment activity for the performance obligation and the freight cost allocable to that performance obligation will be added to the performance obligation revenue. In situations where the contract dictates that control transfer to the customer upon shipment, but the Company is responsible for the shipping and handling activities after transfer of control, the Company has elected the accounting policy to treat those shipping and handling activities as fulfillment activities and not promised services that have to be further evaluated under ASC 606. If the products or services of a performance obligation have an alternative use, then the performance obligation will be recognized at a point-in-time. If the products or services do not have an alternative use or are field-fabricated at the customer's location, then the performance obligation will be recognized over-time.

The point-in-time method recognizes revenue of each performance obligation as it is shipped or delivered to the customer (as determined by the contract) or completed and accepted by the customer for services. The applicable manufacturing cost of each performance obligation is identified and charged to cost of sales as revenue is recognized.

The over-time method recognizes revenue under the percentage-of-completion method of accounting. Under this method, revenues and profits for plant-fabricated projects are recorded by applying the ratio of total manufacturing hours incurred to date for each project to estimated total manufacturing hours for each project. This method provides an accurate depiction of progress on the project because manufacturing labor hours are level (loaded across the duration of the project) as opposed to material costs, which are heavily expended in the beginning of the project and drop off at the end. For field-fabricated projects, revenues and profits are recorded by applying the ratio of costs incurred to date for each contract to the estimated total costs for each contract at completion. This method provides an accurate depiction of progress on the project because of the various types of cost on the field-fabrication projects (e.g., material, labor, rental, and subcontractor, etc.). As these costs occur in the project it is an accurate picture of the progress of the work in total versus looking at one specific component. Other considerations evaluated in the over-time method are significant financing components and variable compensation. A significant financing component does not exist for the Company's projects because a vast majority complete within one year and if a project extends beyond one year there will be progress billings. Variable compensation is accounted for if it is likely to exist on a project (an example would be liquidated damages for delay in the contract and the project is projecting to be late).

For the year ended December 31, 2018, there are customer contracts of which some, but not all, performance obligations have been satisfied. The Company is electing the optional exemption related to these performance obligations because the Company believes the performance obligations will be satisfied in one year or less.

Revenue Recognition for 2017 and 2016 – Revenue from sales of fabricated products is recognized upon passage of title to the customer. Passage of title may occur at the time of shipment from the Company's dock, at the time of delivery to the customer's location, or when projects are completed in the field and accepted by the customer. For large multi-unit projects that are fabricated in the plant, revenue is recognized under the units-of-delivery method, which is a modification of the percentage-of-completion method of accounting for contracts. The units-of-delivery method recognizes as revenue the contract price of units completed and shipped or delivered to the customer (as determined by the contract) or completed and accepted by the customer for field-fabrication projects. The applicable manufacturing cost of each unit is identified and charged to cost of sales as revenue is recognized.

Revenues from long-term, fixed-price contracts that involve only a few deliverables are generally recognized under the percentage-of-completion method of accounting. Under this method, revenues and profits for plant-fabricated projects are recorded by applying the ratio of total manufacturing hours incurred to date for each project to estimated total manufacturing hours for each project. For field-fabricated projects, revenues and profits are recorded by applying the ratio of costs incurred to date for each contract to the estimated total costs for each contract at completion.

For percentage of completion projects in all years reported, estimates of total manufacturing hours and total contract costs for relevant contracts are reviewed continually and, if necessary, are updated to properly state the estimates. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. Costs and estimated earnings in excess of billings on uncompleted contracts arise when costs have been incurred and revenues have been recorded, but the amounts are not yet billable under the terms of the contracts. Such amounts are recoverable from customers upon various measures of performance, including achievement of certain milestones, completion of specified units, or completion of the contracts. Billings in excess of costs and estimated earnings on uncompleted contracts arise as a result of advance and progress billings on contracts.

Costs and estimated earnings on uncompleted contracts and related amounts billed as of December 31, 2018, 2017, and 2016, were as follows (in thousands):

	2018	2017	2016
Costs incurred on uncompleted contracts	$ 27,506	$ 17,473	$ 9,784
Estimated earnings	6,259	1,588	1,703
	33,765	19,061	11,487
Less: Billings to date	31,915	20,709	12,358
	$ 1,850	$ (1,648)	$ (871)

Amounts included in the accompanying Consolidated Balance Sheets as of December 31, 2018, 2017, and 2016, under the following captions were (in thousands):

	2018	2017	2016
Costs and estimated earnings in excess of billings on uncompleted contracts (contract assets)	$ 258	$ 77	$ 173
Income earned not invoiced included in accounts receivable	1,788	–	7
Billings in excess of costs and estimated earnings on uncompleted contracts (contract liabilities)	(196)	(1,725)	(1,051)
	$ 1,850	$ (1,648)	$ (871)

Costs and estimated earnings in excess of billings and billings in excess of costs and estimated earnings relate to contracts in progress and are included in the accompanying Consolidated Balance Sheets as current assets and current liabilities, respectively, as they will be liquidated in the normal course of contract completion, although completion may require more than one year.

Contracts with some customers provide for a portion of the sales amount to be retained by the customer for a period of time after completion of the contract. Retainages included in accounts receivable as of December 31, 2018, were $57,000. As of December 31, 2017, no retainages were included in accounts receivable. Retainages included in accounts receivable as of December 31, 2016, were $73,000.

Shipping fees charged are included in revenue, whereas sales, use, and other taxes collected from customers are excluded from revenue. Outbound shipping and handling costs are included in cost of sales.

For the year ended December 31, 2018, revenue of $762,977, attributable to two customers, was recorded prior to delivery as bill-and-hold transactions, due to both customers requesting delayed delivery and storage of the completed equipment. As of December 31, 2018, the remaining performance obligations related to the storage of the equipment. Revenue will be recognized upon shipment or delivery of the equipment in accordance with the contract terms relating to transfer of control to the customer. As of December 31, 2018, accounts receivable related to bill-and-hold transactions were zero. For the years ended December 31, 2017 and 2016, there were no bill-and-hold transactions.

Trade Accounts Receivable – Trade accounts receivable, reduced by a reserve for doubtful accounts, are reported at the resulting net realizable value on the Consolidated Balance Sheets. The Company's reserves for doubtful accounts are determined based on a variety of factors, including length of time receivables are past due, customer credit ratings, financial stability of customers, past customer history, historical trends, and market conditions. Accounts are evaluated on a regular basis and reserves are established as deemed appropriate, based on the above criteria. Increases to the reserves are charged to the provision for doubtful accounts, and reductions to the reserves are recorded when receivables are written off or subsequently collected.

For standard products and services, the Company's standard payment terms provide for payment in full within thirty (30) days of shipment of the products or completion of the services. For products that are designed and built to customer specifications or are field-fabricated, the Company may have a payment schedule agreement with the customer that provides for advances and progress billings prior to transfer of control of the products or completion of the field-fabrication. In such circumstances, an invoice is issued by the Company based upon the terms of the contract, and the effect on the consolidated financial statements is to record an account receivable and a liability in advance billings. No revenue is recognized on these transactions. The open accounts receivable related to these invoices are netted with advanced billings at each reporting period. As of December 31, 2018, 2017, and 2016, the amounts in advanced billings were $15,179,000, $17,679,000, and $12,235,000, respectively.

For most customer orders there is no right of return provided to the customer. The exception to this would be for standard parts orders in which the Company would allow for return and refund of the purchase price, less an applicable restocking fee.

Inventories – Inventories are valued at the lower of cost or market. Inventory is adjusted using the inventory price index computation ("IPIC") last in, first-out ("LIFO") method. The LIFO method bases inflation measurements on data published by the U.S. Bureau of Labor Statistics. Under the first-in, first-out ("FIFO") method of accounting, which approximates current cost, Company inventories would have been $13,236,000, $11,171,000, and $10,474,000 higher than those reported as of December 31, 2018, 2017, and 2016, respectively.

Inventories of Mueller B.V. were $13,061,000, $18,243,000, and $12,857,000 as of December 31, 2018, 2017, and 2016, respectively, and are recorded at the lower of cost on a FIFO basis, or market.

Intercompany profits in inventory have been eliminated in the preparation of the consolidated financial statements for the years ended December 31, 2018, 2017, and 2016.

The pre-tax results for the twelve months ended December 31, 2018, 2017, and 2016, were unfavorably affected by $2,065,000, $697,000, and $500,000 increases in the LIFO reserve, respectively.

Property, Plant, and Equipment – The Company provides for depreciation expense using principally the double-declining-balance method for new items and the straight-line method for used items. Depreciation expense was $5,724,000, $5,506,000, and $5,927,000 for the years ended December 31, 2018, 2017, and 2016, respectively. The economic useful lives within each property classification are as follows:

	Years
Buildings	33 – 40
Land improvements	10 – 20
Fabrication equipment	5 – 10
Transportation, office, and other equipment	3 – 10

With the new production facility under construction in Groenlo, The Netherlands, Mueller B.V. entered into a sale agreement during the fourth quarter of 2017 on the old production facility in Lichtenvoorde, The Netherlands. The facility was included in land and buildings as of December 31, 2017, at a value of $4,917,000. The sale price was $3,827,000 and the assets were impaired $1,090,000 as of December 31, 2017. The sale was consummated on April 17, 2018.

Maintenance and repairs are charged to expense as incurred. The cost and accumulated depreciation of assets retired are removed from the accounts, and any resulting gains or losses are recorded in the Consolidated Statements of Income.

The unamortized computer software cost included in the accompanying balance sheets was $102,000 for December 31, 2018. No software cost was recognized for the years ended December 31, 2017 and 2016. The computer software project was not complete as of December 31, 2018; the total amount charged to expense was zero for December 31, 2018, 2017, and 2016.

Research and Development – Research and development costs are charged to expense as incurred and were $890,000 during 2018, $468,000 during 2017, and $591,000 during 2016.

Impairment of Plant and Equipment – Plant and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets is evaluated by comparing the carrying amount of an asset to future net undiscounted cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment is determined by measuring the amount by which the carrying amount of the asset exceeds the fair value of the asset as determined by the future net undiscounted cash flows. There were no impairments as of December 31, 2018. Based on the contract to sell the production facility in Lichtenvoorde, the Netherlands, land and buildings were impaired $1,090,000 as of December 31, 2017. There were no impairments as of December 31, 2016.

Earnings Per Common Share – The following table sets forth the computation of basic and diluted earnings per common share (in thousands, except for share data):

	2018	2017	2016
Net income (loss)	$ 2,639	$ (2,326)	$ (2,281)
Shares for basic earnings per common share –			
Weighted-average shares outstanding	1,196,187	1,196,261	1,211,093
Dilutive effect of restricted stock	–	–	–
Shares for diluted earnings per common share –			
Adjusted weighted-average shares outstanding	1,196,187	1,196,261	1,211,093
Earnings (loss) per common share:			
Basic	$ 2.21	$ (1.94)	$ (1.88)
Diluted	$ 2.21	$ (1.94)	$ (1.88)

Comprehensive Income (Loss) – The components of other comprehensive income (loss) for the years ended December 31, 2018, 2017, and 2016, were as follows (in thousands):

	2018	2017	2016
Foreign currency translation adjustment	$ (1,659)	$ 4,061	$ (1,146)
Tax	–	–	–
Foreign currency translation adjustment, net of tax	(1,659)	4,061	(1,146)
Change in pension liability	(1,751)	(5,436)	5,131
Tax	421	1,315	(1,893)
Change in pension liability, net of tax	(1,330)	(4,121)	3,238
Amortization on de-designated hedges	–	3	21
Other comprehensive income (loss)	$ (2,989)	$ (57)	$ 2,113

Statements of Cash Flows – For purposes of the Consolidated Statements of Cash Flows, the Company considers investments with an original maturity of three months or less to be cash equivalents.

Interest and income tax payments made during the years ended December 31, 2018, 2017, and 2016, were as follows (in thousands):

	2018	2017	2016
Interest payments	$ 753	$ 359	$ 482
Income tax payments	$ 428	$ 181	$ 772
Non-cash activities related to investing and financing activities:			
Change in equity related to swap position	$ –	$ 3	$ 21

Shareholders' Investment – The following table sets forth the analysis of common stock issued and held as treasury stock:

	Shares	
	Common	Treasury
Balance – December 31, 2015	1,507,481	270,261
Treasury stock acquisition	–	37,199
Balance – December 31, 2016	1,507,481	307,460
Treasury stock acquisition	–	3,760
Balance – December 31, 2017	1,507,481	311,220
Treasury stock acquisition	–	74
Balance – December 31, 2018	1,507,481	311,294

Goodwill and Other Intangible Assets – The Company follows the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 350 – "Intangibles—Goodwill and Other," with regards to accounting for goodwill and other intangible assets. Amortizable intangible assets with definite lives are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets is evaluated by comparing the carrying amount of an asset to future net undiscounted cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment is determined by measuring the amount by which the carrying amount of the asset exceeds the fair value of the asset.

The Company tests goodwill for impairment as of November 30, or more frequently, if events or changes in circumstances indicate that impairment may be present. For reporting units in which this assessment concludes that it is more likely than not that the fair value is more than its carrying value, goodwill is not considered impaired and the Company is not required to perform the two-step quantitative goodwill impairment test. Qualitative factors considered in this assessment include relevant macroeconomic conditions, limitations on accessing capital, significant fluctuations in foreign exchange rates, industry and market considerations, overall financial performance, and other relevant events and factors affecting the reporting unit. For the years ended 2018, 2017, and 2016, the Company assessed qualitative factors in determining whether it is more likely than not that the fair value of the reporting unit is less than its carrying value. No goodwill impairment charge was required for the years ended December 31, 2018, 2017, or 2016.

Fair Value of Financial Instruments – Financial instruments consist mainly of cash and cash equivalents, accounts receivable, notes receivable, accounts payable, and bank borrowings. These instruments are short-term in nature and their carrying amount approximates fair value. The Company estimated the fair value of long-term debt as of December 31, 2018, based upon borrowing rates available for indebtedness with similar terms and average maturities incorporating the nonperformance risk of the Company, and believes the carrying amount approximates its fair value. The Company estimated the fair value of interest rate swaps by using pricing models developed based on the Euribor swap rate and other observable market data.

Income Taxes – The Company accounts for income taxes in accordance with FASB ASC 740 – "Accounting for Income Taxes." Deferred tax assets and liabilities are recognized for the future tax consequences attributable to the differences between the tax bases of assets and liabilities and their carrying amount for financial reporting purposes, as measured by the enacted tax rates which will be in effect when these differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. In assessing the realizability of deferred income tax assets, the Company considers whether it is more likely than not, according to the criteria of FASB ASC 740, that some portion or all of the deferred income tax assets will be realized. The ultimate realization of deferred income tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. FASB ASC 740 requires that the Company recognize the financial statement benefit of a tax position only after determining that the relevant tax authority would more likely than not sustain the position following an audit. For tax positions meeting the more likely than not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement with the relevant tax authority.

As of December 31, 2018, no provision has been made for U.S. federal deferred income taxes on $23,248,000 of accumulated and undistributed earnings of foreign subsidiaries, since it is the intention of management to indefinitely reinvest the undistributed earnings in those foreign subsidiaries at the U.S. level.

Derivatives – The Company follows FASB ASC (Topic 815) – "Accounting for Derivative Investments and Hedging Activities." The Company uses derivative financial instruments (which consist of interest rate swaps) to assist in its interest rate risk management. All derivatives are measured and reported at fair value on the Company's consolidated balance sheet as other assets or other liabilities. The accounting for changes in the fair value of derivatives depends on the intended use of the derivative and the resulting designation.

As of December 31, 2016, the Company had one cash flow hedging relationship, which was a derivative to hedge the exposure to variability in expected future cash flows. To qualify for hedge accounting, the Company must comply with the detailed rules and documentation requirements at the inception of the hedge, and hedge effectiveness is assessed at inception and on a quarterly basis throughout the life of each hedging relationship. Hedge ineffectiveness, if any, is measured periodically throughout the life of the hedging relationship. The Company does not use derivatives for trading or speculative purposes. The Company did not designate the derivative as a cash flow hedge. As a result, all gains and losses from the changes in the derivative fair value is recognized immediately in earnings.

Reclassifications – Certain reclassifications of prior years' data have been made to conform with current year classifications, with no effect to shareholders' investment, net income, or earnings per share.

Recent Accounting Pronouncements – In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," as amended, which has changed the way the Company recognizes revenue and significantly expanded the disclosure requirements for revenue arrangements. In July 2015, the FASB approved a one-year deferral of the effective date of the standard to 2018 for public companies, with an option that would permit companies to adopt the standard in 2017. Further amendments and technical corrections were made to the standard during 2016.

The core principal of the new standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The two permitted transition methods under the new standard are the full retrospective method, in which case the standard would be applied to each prior reporting period presented and the cumulative effect of applying the standard would be recognized at the earliest period shown, or the modified retrospective method, in which case the cumulative effect of applying the standard would be recognized at the date of initial application.

The Company has adopted the requirements of the new standard effective January 1, 2018, by recognizing the net cumulative effect of initially applying the new standard as an increase to the opening balance of retained earnings. For the evaluation of the net cumulative effect, the Company applied the new standard to the customer contracts that were not completed as of January 1, 2018; however, the actual adjustment was insignificant so no adjustment was recorded.

In April 2015, the FASB issued ASU 2015-03, Interest – "Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs." This ASU requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. ASU 2015-03 is effective for financial statements issued for fiscal years beginning after December 15, 2015, and interim periods within those fiscal years. Retrospective application is required. The adoption of this standard as of January 1, 2016, did not have a material impact on the Company's financial statements.

In July 2015, the FASB issued ASU 2015-11 – "Inventory (Topic 330): Simplifying the Measurement of Inventory." The amendments in the ASU require entities that measure inventory using the first-in, first-out or average cost methods to measure inventory at the lower of cost and net realizable value. Net realizable value is defined as estimated selling price in the ordinary course of business less reasonably predictable costs of completion, disposal, and transportation. ASU 2015-11 is effective for financial statements issued for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016, on a prospective basis. The adoption of this standard as of January 1, 2017, did not have a material impact on the Company's financial statements.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). The guidance in this ASU supersedes the leasing guidance in Topic 840, Leases. Under the new guidance, lessees are required to recognize lease assets and lease liabilities 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.

A modified retrospective transition approach is required. An entity may adopt the guidance either (1) retrospectively to each prior reporting period presented in the financial statements with a cumulative-effect adjustment recognized at the beginning of the earliest comparative period presented or (2) retrospectively at the beginning of the period of adoption through a cumulative-effect adjustment.

The Company will adopt the requirements of the new standard, effective January 1, 2019. The Company is currently evaluating the impact of the pending adoption of the new standard on the Company's consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. The ASU simplifies the measurement of goodwill impairment by eliminating the requirement that an entity compute the implied fair value of goodwill based on the fair values of its assets and liabilities to measure impairment. Instead, goodwill impairment will be measured as the difference between the fair value of the reporting unit and the carrying value of the reporting unit. The ASU also clarifies the treatment of the income tax effect of tax deductible goodwill when measuring goodwill impairment loss. ASU 2017-04 will be effective for the Company beginning on January 1, 2021. The Company is currently evaluating the impact of the adoption of this guidance on its consolidated financial statements.

(2) Acquisitions:

On April 18, 2008, the Company purchased all of the outstanding shares of Paltrok Beheer B.V. (“Paltrok”). The aggregate purchase price was $14,121,000 (including transaction costs of $901,000). The purchase price included $7,750,000 in cash and a loan of $6,371,000 from Rollbas. Rollbas was to be repaid annually from, as defined, cash flows generated by Paltrok until the loan was paid in full.

After the loan was paid in full, the Share Purchase Agreement (SPA) provided for contingent consideration payable to Rollbas on an annual basis from, as defined, cash flows of Paltrok. If, within the five-year period beginning December 31, 2007, contingent consideration was at least $7,486,000 or a higher amount calculated from the payout formula, then no additional amount was to become payable. In the event that, within the five-year period, contingent consideration was less than $7,486,000, then the period to earn contingent consideration was to be extended for two additional years. If, within the two-year period, the contingent consideration reached at least $7,486,000 or the two-year period ends, then no additional amount was to be payable.

On December 12, 2012, the SPA was amended to change the contingent consideration payable to Rollbas from a calculated payout formula to a fixed amount. The fixed amount agreed to in the amendment is $5,280,000, payable in three annual installments, beginning on March 1, 2013. The interest rate is zero.

On September 30, 2008, the Company executed a definitive Share Purchase Agreement (“Agreement”) with KaJeMa Beheer B.V. (“KaJeMa”) to purchase all of the outstanding shares of the MEKO companies (“MEKO”), which are Dutch operating companies and an Asian trading company.

On October 1, 2008, the Company purchased all the outstanding shares of MEKO. The assets acquired included approximately $11,255,000 of intangible assets, including approximately $5,926,000 of goodwill. The intangible assets were measured at their fair values at the date of purchase and, excluding goodwill, are being amortized on a straight-line basis over their estimated remaining useful lives, which range from three to ten years. The aggregate purchase price was $14,020,000 (including transaction costs of $1,112,000). The purchase price included cash in the amount of $5,400,000, a loan of $7,148,000 from KaJeMa, and 32,000 shares of the Company’s common stock valued at $1,472,000.

Paltrok and MEKO are all wholly owned subsidiaries of Mueller B.V., a wholly owned Dutch holding company established by the Company in 2008.

During 2016, Mueller B.V. acquired the remaining 51% of DEG Engineering GmbH (“DEG”) for $263,000 in cash, the forgiveness of a $2,152,000 payable owed to Mueller B.V. from DEG, and $96,000 in other considerations. The DEG acquisition included brand assets and patents useful in growing Mueller B.V. industrial and heat transfer business segments in international markets. The assets and liabilities of the acquired business were recorded at full value based on discounted cash flow model as of the date of control, July 13, 2016. Goodwill of $2,307,000 arising from the acquisition related primarily for expected increase in revenue and future cash flows from operations from product sales associated with the patents. The goodwill is tax deductible.

The purchase prices of Paltrok, MEKO, and DEG exceeded the estimated fair values of the assets acquired and liabilities assumed as of the purchase dates. The excess in both cases was recorded as goodwill in the Company’s records. The transactions as of the acquisition dates were recorded on the Company’s records as follows (in thousands):

	Paltrok	MEKO	DEG
Current assets	$ 11,016	$ 17,980	$ –
Property and equipment	11,057	20,261	–
Intangible asset backlog	1,227	752	–
Other intangible assets	–	4,578	191
Goodwill	3,099	5,926	2,307
Other assets	434	465	13
Total assets acquired	$ 26,833	$ 49,962	$ 2,511
Current liabilities	$ 6,485	$ 20,985	$ –
Long-term debt	4,110	13,237	–
Deferred taxes	1,579	1,276	–
Other liabilities	538	444	–
Total liabilities assumed	$ 12,712	$ 35,942	$ –
Purchase price	$ 14,121	$ 14,020	$ 2,511

(3) Goodwill and Intangible Assets:

Intangible assets as of December 31, 2018, 2017, and 2016, consisted of the following and are included in other assets on the Consolidated Balance Sheets (in thousands):

	Brand Names	Patents	Customer Relationships	Total
Balance as of December 31, 2015	$ –	$ –	$ 469	$ 469
Amortization 2016	–	–	(252)	(252)
Foreign currency fluctuation	–	–	(4)	(4)
Acquisition of DEG	52	139	–	191
Balance as of December 31, 2016	$ 52	$ 139	$ 213	$ 404
Amortization 2017	–	(41)	(200)	(241)
Foreign currency fluctuation	5	20	16	41
Activated patent costs at DEG	–	14	–	14
Balance as of December 31, 2017	$ 57	$ 132	$ 29	$ 218
Amortization 2018	(3)	(39)	(28)	(70)
Foreign currency fluctuation	(3)	(5)	(1)	(9)
Balance as of December 31, 2018	$ 51	$ 88	$ –	$ 139

Average amortization periods for brand names and patents are eighteen and nine years, respectively. Aggregate amortization of intangible assets was $70,000, $241,000, and $252,000 for the years ended December 31, 2018, 2017, and 2016, respectively. Estimated aggregate amortization for the next five years and thereafter are as follows (in thousands):

2019	$ 41
2020	24
2021	23
2022	23
2023	23
Thereafter	5
	$ 139

The changes in the carrying amount of goodwill for the years ended December 31, 2018, 2017, and 2016, were as follows (in thousands):

Balance as of December 31, 2015	$ 11,597
Acquisition of DEG	2,307
Foreign currency fluctuation	(350)
Balance as of December 31, 2016	$ 13,554
Foreign currency fluctuation	1,641
Balance as of December 31, 2017	$ 15,195
Foreign currency fluctuation	(656)
Balance as of December 31, 2018	$ 14,539

(4) Retirement Plans:

The Company has a Profit Sharing and Retirement Savings Plan [401(k) plan] in which substantially all domestic employees are eligible to participate. The 401(k) plan provides for a match of employees' contributions up to a specified limit. The assets of the 401(k) plan are deposited with a trustee and are invested at the employee's option in one or more investment funds. Total Company contributions to the 401(k) plan were $939,000 for 2018, $850,000 for 2017, and $812,000 for 2016.

The Company has pension plans covering domestic employees who are represented by a bargaining unit and employees who are not represented by a bargaining unit. Benefits under the pension plans are based on a flat benefit formula and final average pay, respectively. Employees not represented by the bargaining unit that are first hired after December 31, 2006, will not be covered under the applicable pension plan. Also, after December 31, 2010, there will be no further accrual of benefits for participants under the pension plan for employees not represented by the bargaining unit. Employees represented by the bargaining unit that are first hired after June 30, 2007, will not be covered under the applicable pension plan. Also, after June 30, 2011, there will be no further accrual of benefits for participants under the pension plan for employees represented by the bargaining unit.

The Company also contributes to a union sponsored multi-employer benefit plan for certain domestic employees. Benefits under this multi-employer plan are generally based on compensation levels and years of service. For the Company, the financial risks of participating in a multi-employer plan are different from single-employer plans in the following respects:

Assets contributed to the multi-employer plan by one employer may be used to provide benefits to employees of other participating employers.

If a participating employer discontinues contributions to a plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

If a participating employer chooses to stop participating in a plan, a withdrawal liability may be created based on the unfunded vested benefits for all employees in the plan.

Under federal legislation regarding multi-employer pension plans, in the event of a withdrawal from a plan or plan termination, companies are required to continue funding their proportionate share of such plan's unfunded vested benefits. The Company is a participant in a union sponsored multi-employer plan, and, as a plan participant, the Company's potential obligation could be significant. The amount of the potential obligation is not currently ascertainable because the information required to determine such amount is not identifiable or readily available.

The Company's participation in the plan for the year ended December 31, 2018, is outlined in the following table. The "EIN/Pension Plan Number" column provides the Employer Identification Number ("EIN") and the three digit plan number. The zone status is based on the latest information that the Company received from the plan and is certified by the plan's actuary. Plans in the red zone are generally less than 65 percent funded, plans in the yellow zone are generally less than 80 percent funded, and plans in the green zone are generally at least 80 percent funded. The "FIP/RP Status Pending/Implemented" column indicates plans for which a financial improvement plan ("FIP") or a rehabilitation plan ("RP") is either pending or has been implemented. The "Surcharge Imposed" column includes plans in a red zone status that require a payment of a surcharge in excess of regular contributions. The last column lists the expiration date of the collective-bargaining agreement to which the plan is subject.

Pension Fund	EIN/Pension Plan Number	Pension Protection Act Zone Status			FIP/RP Status Pending/ Consolidated	Company Contributions			Surcharge Imposed	Expiration Date of Collective-Bargaining Agreement
		2018	2017	2016		2018	2017	2016		
Boilermaker-Blacksmith National Pension Trust	48-6168020/001	Yellow	Red	Yellow	Yes	$493,883	$391,375	$395,373	No	Described Below[(a)]

(a) The Company's collective bargaining agreement with the Boilermaker-Blacksmith National Pension Trust is under a National Maintenance Agreement, which is evergreen in terms of expiration. However, the agreement allows for termination of the collective bargaining agreement by either party with a predetermined written notice.

Mueller B.V. has pension plans covering employees who are represented by a union and employees who are not represented by a union. The plans are defined contribution plans, and contributions included in the accompanying Consolidated Statements of Income were $1,311,000 for 2018, $1,262,000 for 2017, and $1,238,000 for 2016.

Total domestic pension expense under the plans was $843,000 for 2018, $1,787,000 for 2017, and $8,407,000 for 2016. The required minimum contributions to be made in 2019 are estimated to be $5,179,000. The Company uses a January 1 measurement date for its plans.

The following table sets forth the required disclosures for the domestic pension plans as of December 31 (in thousands):

	2018	2017	2016
Change in projected benefit obligation –			
Benefit obligation as of beginning of year	$ 99,908	$ 89,509	$ 101,457
Interest cost	3,413	3,955	4,549
Settlements	–	–	(13,830)
Actuarial (gain) loss	(5,046)	11,409	2,177
Benefits paid and expenses	(5,539)	(4,965)	(4,844)
Lump sum paid	(387)	–	–
Benefit obligation as of end of year	$ 92,349	$ 99,908	$ 89,509
Change in plan assets –			
Fair value of plan assets as of beginning of year	65,141	57,881	68,930
Actual return on plan assets	(4,227)	8,140	3,450
Employer contributions	5,280	4,086	4,175
Settlements	–	–	(13,830)
Benefits paid and expenses	(5,539)	(4,966)	(4,844)
Lump sum paid	(387)	–	–
Fair value of plan assets as of end of year	$ 60,268	$ 65,141	$ 57,881
Funded status	$ (32,081)	$ (34,767)	$ (31,628)
Funded status as of end of year	$ (32,081)	$ (34,767)	$ (31,628)

Components of pension expense for the three years were (in thousands):

	2018	2017	2016
Interest cost	$ 3,413	$ 3,955	$ 4,549
Expected return on plan assets	(4,234)	(3,561)	(4,304)
Amortization of prior service cost	1,664	1,393	1,441
Net loss due to settlements	–	–	6,721
Net periodic pension expense	$ 843	$ 1,787	$ 8,407

Projected benefit obligations, accumulated benefit obligations, and fair value of plan assets were as follows as of December 31 (in thousands):

	2018	2017	2016
Projected benefit obligations	$ 92,349	$ 99,908	$ 89,509
Accumulated benefit obligations	$ 92,349	$ 99,908	$ 89,509
Fair value of plan assets	$ 60,268	$ 65,141	$ 57,881

Weighted average assumptions used to determine benefit obligations as of December 31 were as follows:

	2018	2017	2016
Discount rate	4.16%	3.50%	4.54%
Rate of compensation increase	N/A	N/A	N/A

Weighted average assumptions used to determine net periodic pension expense for the three years ended December 31 were as follows:

	2018	2017	2016
Discount rate	3.50%	4.55%	4.63%
Expected long-term return on plan assets	6.37%	6.40%	6.67%
Rate of compensation increase	N/A	N/A	N/A

Pension expense is calculated based upon a number of actuarial assumptions established on January 1 of the applicable year (detailed in the table above), including the weighted average discount rate, the expected long-term rate of return on plan assets, and the rate of increase in future compensation levels for the applicable plan. Discount rates were determined by creating hypothetical portfolios of high-quality bonds available without call features and in U.S. dollars as of the measurement date. These portfolios were constructed in such a way that all expected benefit payments from the plans could be provided by the coupon and maturity payments of the bonds as they become payable. Although the match could not be exact, the portfolios were constructed so that the excess bond payments were held to a minimum and were paid out as soon as possible. The discount rate used to determine pension expense decreased from 4.63% for 2016 to 4.55% for 2017 to 3.50% for 2018. The effect of the rate decrease was to decrease pension expense by $424,507 for 2018. In developing the expected long-term rate of return assumption for plan assets (which consist mainly of U.S. equity and fixed income securities), input was considered from the actuaries and the investment advisors. The rate is intended to reflect the average rate of return expected to be earned on the funds invested or to be invested to provide plan benefits. In determining the rate, appropriate consideration was given to historical performance of the major asset classes held or anticipated to be held by the plans and the forecast for future rates of return for those asset classes. The long-term rate of return assumption was 6.37% for 2018, 6.40% for 2017, and 6.67% for 2016.

The Company has adopted a pension investment policy designed to achieve an adequate funding status based on expected benefit payouts and to establish an asset allocation that will meet or exceed the long-term rates of return assumptions, while maintaining a prudent level of risk. The Company uses the services of outside consultants in setting appropriate asset allocation targets and monitoring investment performance. Plan assets are invested in equity securities, fixed income securities, and cash.

Within the equities asset class, the investment policy provides for investments in a broad range of publicly traded securities, including both domestic and American depositary receipts ("ADRs") diversified by value, growth, and capitalization. An ADR is a negotiable security that represents the underlying securities of a non-United States company that trades in the U.S. financial markets. Within the fixed income class, the investment policy provides for investments in a broad range of high-quality corporate debt securities and U.S. government securities, in addition to pooled separate accounts maintained by an insurance carrier.

The weighted average asset allocations of the pension plans as of December 31 were as follows:

	2018	2017	2016
Asset category:			
Equities	58%	64%	58%
Fixed income	41%	35%	40%
Other	1%	1%	2%
	100%	100%	100%

The long-term asset allocation on average will approximate 60% in equities and 40% in fixed income securities. The objective on a long-term basis is to achieve an excess return over the actuarial assumptions for the expected long-term rates of return on plan assets. The investment strategy employed is a long-term risk-control approach using diversified investment options with no exposure to volatile investment options, such as financial futures, derivatives, etc. The plans use a diversified allocation of equity and fixed income securities that are customized to each plan's cash flow benefit needs.

Assets are categorized into fair value, based upon the assumptions (inputs) used to value the assets in accordance with the fair value hierarchy established in FASB ASC 820 – "Fair Value Measurements and Disclosures." The following table summarizes the fair value of the Company's plans' assets as of December 31, 2018, 2017, and 2016 (in thousands):

Asset Category	Fair Value at 12-31-18	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Investments at Net Asset Value
Cash and cash equivalents	$ 850	$ 850[a]	$ –	$ –	$ –
Equity securities	34,366	34,366[b]	–	–	–
Fixed income securities	25,052	15,786[c]	–	–	9,266[d]
Total plan assets	$ 60,268	$ 51,002	$ –	$ –	9,266

Asset Category	Fair Value at 12-31-17	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Investments at Net Asset Value
Cash and cash equivalents	$ 723	$ 723[a]	$ –	$ –	$ –
Equity securities	41,427	41,427[b]	–	–	–
Fixed income securities	22,991	12,440[c]	–	–	10,551[d]
Total plan assets	$ 65,141	$ 54,590	$ –	$ –	10,551

Asset Category	Fair Value at 12-31-16	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Investments at Net Asset Value
Cash and cash equivalents	$ 1,015	$ 1,015[a]	$ –	$ –	$ –
Equity securities	34,024	34,024[b]	–	–	–
Fixed income securities	22,842	11,529[c]	–	–	11,313[d]
Total plan assets	$ 57,881	$ 46,568	$ –	$ –	11,313

(a) The assets consist primarily of institutional money market mutual funds.

(b) The assets consist primarily of exchange traded funds and institutional mutual funds which hold domestic and international equities.

(c) The assets consist primarily of fixed income investments in pooled separate accounts and institutional mutual funds that include issues of the U.S. government and its agencies and high quality corporate issues.

(d) In accordance with ASC 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the statement of financial position.

Pension benefits expected to be paid over the next ten years are as follows (in thousands):

2019	$ 5,396
2020	5,515
2021	5,550
2022	5,631
2023	5,627
2024 through 2028	31,700
	$ 59,419

Included in accumulated other comprehensive loss as of December 31, 2018, are the following amounts that have not yet been recognized in net periodic pension expense: unrecognized actuarial losses of $49,650,000 ($36,339,000, net of tax). Included in accumulated other comprehensive loss as of December 31, 2017, are the following amounts that have not yet been recognized in net periodic pension expense: unrecognized actuarial losses of $47,899,000 ($30,301,000, net of tax). Included in accumulated other comprehensive loss as of December 31, 2016, are the following amounts that have not yet been recognized in net periodic pension expense: unrecognized actuarial losses of $42,462,000 ($30,573,000, net of tax). The actuarial loss included in accumulated other comprehensive loss and expected to be recognized in net periodic pension expense during the year ended December 31, 2019, is $1,793,000.

(5) Income Taxes:

The provision (benefit) for taxes on income before income taxes included (in thousands):

	2018	2017	2016
Current tax expense	$ (710)	$ 284	$ 294
Deferred, net	1,182	5,389	(1,256)
	$ 472	$ 5,673	$ (962)

Deferred tax assets and liabilities arise from the differences between financial reporting and tax reporting of assets and liabilities that most often result from differences in timing of income and expense recognition. The detail of the deferred tax assets and liabilities as of December 31, 2018, 2017, and 2016, is shown below (in thousands):

	2018	2017	2016
Deferred tax assets:			
Worker's compensation	$ 155	$ 108	$ 153
Vacation	171	212	366
Warranty	88	83	107
Doubtful accounts	57	61	86
Pensions	7,296	7,970	10,984
Inventory	195	196	279
Tax attribute carryforward	1,944	2,134	2,874
Other	383	368	1,219
Net deferred tax assets	$ 10,289	$ 11,132	$ 16,068
Deferred tax liabilities:			
Intangibles	$ (33)	$ (1,482)	$ (1,051)
Property, plant, and equipment	(2,699)	(1,526)	(2,332)
Other liabilities	(622)	(504)	(807)
Net deferred tax liabilities	$ (3,354)	$ (3,512)	$ (4,190)
Net deferred tax assets	$ 6,935	$ 7,620	$ 11,878

As of December 31, 2018, net deferred tax assets were $10,289,000 and net deferred tax liabilities were $3,354,000. As of December 31, 2017, net deferred tax assets were $11,132,000 and net deferred tax liabilities were $3,512,000. As of December 31, 2016, net deferred tax assets were $16,068,000 and net deferred tax liabilities were $4,190,000. On the accompanying Consolidated Balance Sheets, domestic net deferred tax assets are included as non-current assets and foreign deferred tax liabilities are included in other long-term liabilities, as appropriate. Income taxes receivable (payable) at December 31, 2018, 2017, and 2016, were $928,000, $901,000, and $444,000, respectively, and are included in accounts receivable on the accompanying Consolidated Balance Sheets. For balance sheet presentation, the deferred tax assets and liabilities are required to be netted by jurisdiction, as shown below (in thousands):

Deferred tax assets, United States	$ 9,348
Deferred tax liability, United States	(2,000)
Net deferred tax assets, United States	$ 7,348
Net deferred tax liabilities, the Netherlands	$ 413

The Company's deferred income tax assets include certain future tax benefits. As of December 31, 2018, the tax effected deferred tax assets included $249,000 related to state net operating losses and none related to federal net operating losses, which expire between the years 2019 and 2034. Tax credits as of December 31, 2018, of $359,000 are included in the deferred tax assets and expire between the years 2033 and 2038.

A reconciliation between the expected income tax expense at the statutory federal income tax rate (21%) and the reported income tax expense for each of the three years ended December 31, 2018, 2017, and 2016, follows (in thousands):

	2018	Rates	2017	Rates	2016	Rates
Statutory federal income tax expense (benefit)	$ 653	21.00%	$ 1,138	34.00%	$ (1,103)	34.00%
Increase (decrease) in taxes resulting from:						
Tax credits	(92)	(2.96%)	(86)	(2.57%)	(103)	3.17%
State tax, net of federal benefit	234	7.52%	172	5.16%	(141)	4.35%
Net unrecognized tax positions	(45)	(1.45%)	(178)	(5.32%)	(31)	.96%
International taxes	(579)	(18.62%)	347	10.37%	(193)	5.95%
Deferred rate change	70	2.25%	46	1.37%	45	(1.39%)
Tax reform rate change	–	–	3,251	97.15%	–	–
Transition tax	–	–	920	27.49%	–	–
Permanent differences	31	1.01%	40	1.20%	53	(1.63%)
Other, net	200	6.43%	23	.66%	511	(15.76%)
	$ 472	15.18%	$ 5,673	169.51%	$ (962)	29.65%

A reconciliation of the beginning and ending amounts of unrecognized tax benefits follows. The balances as of December 31, 2018, 2017, and 2016, are included in other long-term liabilities and in the deferred tax liabilities on the accompanying Consolidated Balance Sheets (in thousands):

Balance as of December 31, 2015	$ 660
Additions based on tax positions related to the current year	53
Reductions for tax positions of prior years	(31)
Balance as of December 31, 2016	682
Additions based on tax positions related to the current year	28
Reductions for tax positions of prior years	(290)
Balance as of December 31, 2017	420
Additions based on tax positions related to the current year	30
Reductions for tax positions of prior years	(56)
Balance as of December 31, 2018	$ 394

Federal tax returns are generally subject to examination for tax years 2015 and forward. State statutes vary, but state income tax returns are generally subject to examination from 2014 and forward. The unrecognized benefits of $394,000 as of December 31, 2018, would affect the Company's effective tax rate, if recognized. The Company records potential interest and penalties related to uncertain tax positions as a component of income tax expense. Interest and penalty expense were not significant for the years ended December 31, 2018, 2017, and 2016.

During 2018, the company concluded its final analysis of the impact of tax reform and reported those items on its 2017 tax return. The final impact of tax reform was consistent with the estimates recorded in 2017.

(6) Borrowings:

In 2014, the Company entered into a domestic bank borrowing facility of $15,000,000. On November 16, 2018, the Company amended the domestic bank borrowing facility agreement to extend the agreement until November 16, 2021. The Company has a financial leverage covenant of Total Debt to EBITDA and a minimum fixed charge coverage at each quarter for the trailing twelve months. The Company was in compliance with the borrowing covenant as of December 31, 2018.

Borrowings under the facility incur interest at the 30-day LIBOR Daily Floating Rate plus 1.15% as defined, and are secured by domestic accounts receivable and inventory. The rate at December 31, 2018, was 3.61%. As of December 31, 2018, the balance outstanding was $6,083,000 under the facility. As of December 31, 2017, the balance outstanding was zero under the facility. As of December 31, 2016, the balance outstanding was $2,844,000 under the facility.

In 2018, Mueller B.V.'s operating companies amended the bank borrowing facility to $7,980,000. Borrowings under the facilities are at variable rates of one-month Euribor plus 1.55%. The rate at December 31, 2018, was 1.18%. Total borrowing under the facilities was $2,859,000 as of December 31, 2018, $2,717,000 as of December 31, 2017, and $5,015,000 as of December 31, 2016. Mueller B.V. has a financial leverage covenant of a minimum EBITDA, Total Debt to EBITDA, and a minimum fixed charge coverage at each quarter for the trailing twelve months. Mueller B.V. was in violation of the financial covenants as of December 31, 2018. Subsequent to year end, a waiver was obtained from the lender for the covenant violation as of December 31, 2018.

As of December 31, 2018, the Company had long-term notes payable with an outstanding balance of $22,868,000. Listed below is a summary of amounts outstanding for notes payable. The current portion is included in current maturities of long-term debt, and the long-term portion is included in long-term debt on the accompanying Consolidated Balance Sheets (in thousands).

	Outstanding Balance			Current Maturities		
	2018	2017	2016	2018	2017	2016
Mueller B.V. note payable related to intercompany loan. Note matures in 2027 with a variable rate of 30-day LIBOR plus 2.0%. The rate at year end was 4.35%. Payments are made annually.	$ 8,586	$ 5,532	$ 4,985	$ –	$ –	$ 525
Mueller B.V. note payable secured by equipment and certain assets. Note matures in 2027. The rate at year end was .48%. Note paid in full as of April 2018.	–	305	267	–	33	29
Mueller B.V. note payable related to mortgage loan secured by real estate, fixed assets, accounts receivable, inventory, and insurance proceeds. Note matures in 2033 with a fixed rate of 2.60%. Payments are made quarterly.	8,778	9,600	–	456	360	–
Mueller B.V. note payable related to mortgage loan secured by real estate, fixed assets, accounts receivable, inventory, and insurance proceeds. Note matures in 2035 with a current variable rate of 1.68%. Payments are made quarterly.	11,229	10,348	–	684	540	–
Mueller B.V. mortgage loan secured by land and buildings. Note paid off with the sale of former production facility.	–	1,500	1,312	–	120	105
Notes payable related to Mueller B.V. and subsidiaries	28,593	27,285	6,564	1,140	1,053	659
Domestic notes payable secured by land, buildings, and equipment. Note matures in 2020 with a variable rate of 30-day LIBOR plus 1.5%. The rate at year end was 3.95%. Payments are monthly.	2,861	3,113	3,363	250	251	250
Elimination of intercompany loans	(8,586)	(5,532)	(4,985)	–	–	(525)
Total notes payable	$ 22,868	$ 24,866	$ 4,942	$ 1,390	$ 1,304	$ 384

The principal payments of the notes payable as of December 31, 2018, and for future years are listed below (in thousands):

2019	$	1,390
2020		3,751
2021		1,140
2022		1,140
2023		1,140
Thereafter		14,307
	$	22,868

(7) Guarantees:

The Company has two standby letter-of-credit facilities of $5,000,000 and $2,145,000. As of December 31, 2018, there were standby letters of credit totaling $885,000 and $2,145,000, respectively, issued under these facilities, which will expire within one to two years.

The standard warranty provided by the Company is against defects in materials and workmanship and a compliance to specifications for a period of twelve (12) months after shipment of the equipment or completion of the services as applicable in each case.

The Company's provisions for warranty expense have historically been a relatively consistent percentage of sales. Warranty claims tend to occur shortly after product delivery, as a significant portion of the Company's sales are engineered-to-order products built to customer specifications. A warranty provision is recorded when notification is received of a potential claim based on an estimate of the cost to repair or replace, in addition to a general reserve provision based on a multi-year lag analysis. Warranty claims are reviewed monthly and reserves are adjusted to properly reflect the remaining estimated cost to complete the repair or to provide a replacement. The following is a reconciliation of changes in the warranty reserve, which is included with other accrued expenses on the Consolidated Balance Sheets for the years ended December 31, 2018, 2017, and 2016 (in thousands):

	2018		2017		2016	
Beginning balance	$	1,177	$	1,044	$	1,028
Costs incurred to satisfy warranty claims		(1,422)		(851)		(749)
Aggregate warranty reserves made		2,159		1,095		1,003
Aggregate changes to warranty reserves		(555)		(111)		(238)
Ending balance	$	1,359	$	1,177	$	1,044

(8) Contingencies:

The Company has operating leases with total aggregate future minimum payments of $2,166,000 and terms exceeding one year. The lease expense for the years ended December 31, 2018, 2017, and 2016, was $1,179,000, $1,214,000, and $1,142,000, respectively. The future minimum lease payments for each of the years subsequent to December 31, 2018, will be (in thousands):

2019	$	940
2020		475
2021		363
2022		223
2023		134
2024 and after		31
	$	2,166

(9) Segment Data:

The Company has four reportable segments: Dairy Farm Equipment, Industrial Equipment, Field Fabrication, and Transportation. Dairy Farm Equipment segment sales are made by the Company to independent dealers for resale. Mueller B.V. also sells directly to farmers and provides service for farmers and milk coolers for rent to farmers. Products include milk cooling and storage equipment and accessories, refrigeration units, and heat recovery equipment for use on dairy farms. The Industrial Equipment segment includes sales of the following products directly to industrial customers: food, beverage, chemical, and industrial processing equipment; biopharmaceutical equipment; and pure water equipment. The Field Fabrication segment includes sales of very large, field-fabricated tanks and vessels that cannot be built and shipped from the plant. Typical projects are large stainless steel storage tanks for sanitary and industrial process applications. The Transportation segment includes the delivery of products to customers and backhauls of materials and components. The segment also includes the transportation of components for the Field Fabrication segment and contract carriage for third parties.

Management evaluates performance and allocates resources based on income or loss before income taxes for the segments. The accounting policies of the reportable segments are the same as those described in Summary of Accounting Policies (Note 1) to these consolidated financial statements.

Reportable segments are managed separately because they offer different products and serve different markets. Industrial Equipment products have been aggregated because they are designed and built to a customer's specifications, and they use common processes and resources. Similar economic conditions affect the long-term financial performance of the product lines included in the Industrial Equipment segment.

The Dairy Farm Equipment segment includes standard products that are built to stock and are available for sale from inventory. The demand for Dairy Farm Equipment products is affected by the economic factors that influence the profitability of dairy farmers. The Field Fabrication segment uses different skills and fabrication methods and requires different technology and expertise than other segments. The Transportation segment is a trucking operation.

Net sales include revenues from sales to unaffiliated and affiliated customers and include intersegment eliminations (in thousands). The Other/Corporate classification includes other revenues, unallocated corporate assets and expenses, and corporate other income (expense).

	2018					
	Dairy Farm Equipment	Industrial Equipment	Field Fabrication	Transportation	Other/ Corporate	Consolidated
Net sales	$ 83,000	$ 104,889	$ 10,457	$ 2,864	$ –	$ 201,210
Depreciation and amortization expense	$ 3,384	$ 2,005	$ 67	$ 58	$ 280	$ 5,794
Income (loss) before income tax	$ 1,612	$ 2,951	$ 856	$ 354	$ (2,662)	$ 3,111
Assets	$ 76,526	$ 37,365	$ 2,801	$ 522	$ 12,974	$ 130,188
Additions to property, plant, and equipment	$ 3,141	$ 1,231	$ 171	$ 196	$ 99	$ 4,838

	2017					
	Dairy Farm Equipment	Industrial Equipment	Field Fabrication	Transportation	Other/ Corporate	Consolidated
Net sales	$ 77,269	$ 78,916	$ 9,065	$ 2,707	$ –	$ 167,957
Depreciation and amortization expense	$ 3,429	$ 1,907	$ 29	$ 83	$ 299	$ 5,747
Income (loss) before income tax	$ 2,920	$ 2,345	$ 286	$ 51	$ (2,255)	$ 3,347
Assets	$ 80,031	$ 36,617	$ 1,811	$ 431	$ 21,004	$ 139,894
Additions to property, plant, and equipment	$ 17,591	$ 5,858	$ 58	$ 54	$ 189	$ 23,750

	2016					
	Dairy Farm Equipment	Industrial Equipment	Field Fabrication	Transportation	Other/ Corporate	Consolidated
Net sales	$ 80,037	$ 73,920	$ 11,953	$ 2,111	$ –	$ 168,021
Depreciation and amortization expense	$ 3,745	$ 1,972	$ 35	$ 77	$ 350	$ 6,179
Income (loss) before income tax	$ 5,116	$ 478	$ 1,530	$ (97)	$ (10,270)	$ (3,243)
Assets	$ 55,311	$ 28,048	$ 2,145	$ 410	$ 18,751	$ 104,665
Additions to property, plant, and equipment	$ 3,219	$ 747	$ 43	$ 106	$ 169	$ 4,284

Revenues from external customers by product category for the three years ended December 31, 2018, were (in thousands):

	2018	2017	2016
Milk cooling and storage equipment	$ 82,527	$ 77,156	$ 79,881
Process vessels and tanks	103,472	80,717	75,988
Other industrial equipment	15,211	10,084	12,152
	$ 201,210	$ 167,957	$ 168,021

Revenues from external customers by geographic location are attributed to countries based on the final destination of the goods and for the three years ended December 31, 2018, were (in thousands):

	2018	2017	2016
United States	$ 118,944	$ 99,588	$ 93,316
North America (excluding the U.S.)	16,694	15,916	10,434
Asia and the Far East	12,454	4,208	5,972
The Netherlands	24,286	19,803	35,309
EU countries	25,285	26,049	17,751
Other areas	3,547	2,393	5,239
	$ 201,210	$ 167,957	$ 168,021

During 2018, 2017, and 2016, export sales to any one country were not in excess of 10% of consolidated sales.

During 2018, 2017, and 2016, sales to any one customer were not in excess of 10% of consolidated sales.

Long-lived assets owned by the Company for the three years ended December 31, 2018, were (in thousands):

	2018	2017	2016
North America	$ 14,902	$ 14,599	$ 15,036
Asia and the Far East	1,413	1,698	2,209
The Netherlands	49,062	50,702	30,258
	$ 65,377	$ 66,999	$ 47,503

(10) Long-Term Incentive Plans:

The Company has two stock-based compensation plans: the 2009 Long-Term Incentive Plan ("Employee Plan") and the Non-Employee Director Stock Option and Restricted Stock Plan ("Director Plan"). The Employee Plan has an expiration date of February 12, 2019.

The Employee Plan provides for restricted stock, incentive stock options, and nonqualified stock option awards for executives and key employees. An aggregate of 200,000 shares of common stock can be awarded under the Employee Plan. There were no grants under either plan for 2018, 2017, and 2016.

The authority to make additional restricted stock grants under the Director Plan, last approved by a shareholder vote in 2002, expired on January 31, 2012. The remaining shares of restricted stock previously granted to non-employee directors under this plan vested in May 2015.

No stock options are outstanding as of December 31, 2018.

Under the Plans, restricted shares of stock vest five years after the effective date of grant. Compensation expense was computed by multiplying the number of shares granted by the fair market value of the common stock on the date of grant. The expense is amortized ratably over the vesting period.

No compensation expense recognized for restricted shares for the years ended December 31, 2018, 2017, and 2016. As of December 31, 2018, zero shares of restricted stock were outstanding under the Plans. The total remaining unrecognized stock based compensation cost related to unvested restricted stock as of December 31, 2018, was zero.

(11) Fair Value Measurements:

In accordance with ASC Topic 820 – "Fair Value Measurements and Disclosures" (ASC 820), the Company utilizes market approach to measure fair value for its financial assets and liabilities. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets and liabilities. The ASC defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles, and expands guidance establishing the following hierarchy for categorizing these inputs:

Level 1: Quoted market prices in active markets for identical assets or liabilities.

Level 2: Significant other observable inputs (e.g., quoted prices for similar items in active markets, quoted prices for identical or similar items in markets that are not active, inputs other than quoted prices that are observable such as interest rate and yield curves, and market-corroborated inputs).

Level 3: Significant unobservable inputs.

There were no interest rate swaps as of December 31, 2018 and 2017. As of December 31, 2016, the estimated fair value of the interest rate swaps was a net liability of $20,000 and was included in other long-term liabilities on the Consolidated Balance Sheets.

The following table presents fair value measurements as of December 31, 2016 (in thousands):

	Fair Value Measurements			Liabilities at
	Level 1	Level 2	Level 3	Fair Value
Derivative instruments	$ –	$ 20	$ –	$ 20
Total	$ –	$ 20	$ –	$ 20

Derivative Instruments – The Company does not engage in the trading of derivative financial instruments except where the Company's objective is to manage the variability of forecasted interest payments attributable to changes in interest rates. In general, the Company enters into derivative transactions in limited situations based on management's assessment of current market conditions and perceived risks. Derivative instruments are recorded on the Consolidated Balance Sheets at their respective fair value.

On March 1, 2007, the Company entered into two interest rate exchange agreements that involved the exchange of floating interest obligation for a fixed rate without the exchange of the underlying notional amounts of $3,074,000 and $727,000, respectively. Under the two swap agreements, the Company pays fixed interest rates of 4.35% and 4.48%, respectively, and receives interest at the one-month Euribor rate. The swap agreements expired March 1, 2017.

Previously, the Company designated its interest rate exchange agreements as cash flow hedges, whose unrealized fair value gains and losses were recorded to other comprehensive income. Effective December 31, 2009, the Company elected to de-designate all of its interest rate exchange agreements that had been designated as cash flow hedges and elected to discontinue hedge accounting prospectively. As a result, the Company will recognize all gains and losses from prospective changes in derivative fair values immediately in earnings, rather than deferring any such amounts in accumulated other comprehensive income (loss). As a result of discontinuing hedge accounting, such market-to-market values as of December 31, 2018, remain in accumulated other comprehensive income (loss) as of the de-designation date.

(12) Subsequent Events:

Mueller B.V. was in violation of certain financial covenants in its bank borrowing facility and its notes payable for the construction of the new building. On March 4, 2019, the Company loaned Mueller B.V. $3,427,000 in subordinated debt from the Company's available cash and borrowing on its domestic facility. This amount plus an additional $1,138,000 of subordinated debt loaned to Mueller B.V. in November 2018 was used to pay down on the variable rate note payable on March 8, 2019. In return, the bank waived the loan covenant violations as of December 31, 2018, and any possible future violations through March 31, 2020. In addition, Mueller B.V. agreed to reduce their capacity of the bank borrowing facility from $7,980,000 to $6,780,000.

Safe Harbor for Forward-Looking Statements

The President's message on pages 3 and 4 of this Annual Report contains certain statements that constitute "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to any historical or current fact. All statements regarding future performance, growth, sales and earnings projections, conditions, or developments are forward-looking statements. Words such as "anticipates," "believes," "intends," "expects," "may," "will," "should," "could," "plans," "forecasts," "estimates," "predicts," "projects," "potential," "continue," "outlook," and similar expressions may be intended to identify forward-looking statements.

Actual future results may differ materially from those described in the forward-looking statements due to a variety of factors, including the fact that the worldwide economy generally, and the dairy farm equipment, industrial equipment, field-fabrication markets, and factors affecting the trucking industry specifically are all currently subject to uncertainty, making it difficult to determine if past experience is a good guide to the future. A downturn in the Company's business segments could adversely affect the Company's revenues and results of operations. Other factors affecting forward-looking statements, some of which are identified in the discussion relating to such forward-looking statements, include, but are not limited to, the following: specific economic conditions in the food, dairy, beverage, chemical, pharmaceutical, biotechnological and other process industries, and the international dairy farm equipment market and the impact of such conditions on the Company's customers in such markets; the cyclical nature of some of the Company's markets; milk prices, feed costs, weather conditions, dairy farm consolidation, and other factors affecting the profitability of dairy farmers; the price of stainless steel; the highly competitive nature of the markets for the Company's products, as well as pricing pressures that may result from such competitive conditions; business relationships with major customers and suppliers; the continued operation and viability of the Company's major customers; the Company's execution of internal performance plans; difficulties or delays in manufacturing; cost-reduction and productivity efforts; competing technologies and difficulties in entering new markets, both domestic and foreign; changes in product mix; future levels of indebtedness and capital spending; claims, including, without limitation, warranty claims, product liability claims, charges or dispute resolutions; ability of suppliers to provide materials as needed and the Company's ability to recover any price increases for materials and product pricing; the Company's ability to attract and retain key technical and other personnel; labor relations; the failure of customers to make timely payment; the Company's ability, both domestically and in Europe, to maintain adequate financing for operations; any inadequacy of the Company's intellectual property protection or the potential for third-party claims of infringement; global economic factors, including currency exchange rates; general economic conditions, including interest rates, the rate of inflation, and commercial and consumer confidence; energy prices; governmental laws and regulations affecting domestic and foreign operations, including tax obligations; changes in accounting standards; worldwide political stability; the effects of terrorist activities and resulting political or economic instability, including U.S. military action overseas; and the effect of acquisitions, divestitures, restructurings, product withdrawals, and other unusual events.

The Company cautions the reader that these lists of cautionary statements and risk factors may not be exhaustive. The Company expressly disclaims any obligation or undertaking to release publicly any updates or changes to these forward-looking statements that may be made to reflect any future events or circumstances.

RSM US LLP

Independent Auditor's Report

To the Board of Directors
Paul Mueller Company and Subsidiaries

Report on the Financial Statements
We have audited the accompanying consolidated financial statements of Paul Mueller Company and Subsidiaries (the Company), which comprise the consolidated balance sheets as of December 31, 2018, 2017 and 2016, the related consolidated statements of operations, comprehensive income (loss), shareholders' investment and cash flows for the years ended December 31, 2018, 2017 and 2016, and the related notes to the consolidated financial statements (collectively, the financial statements).

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility
Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Paul Mueller Company and Subsidiaries as of December 31, 2018, 2017 and 2016, and the results of their operations and their cash flows for the years ended December 31, 2018, 2017 and 2016, in accordance with accounting principles generally accepted in the United States of America.

RSM US LLP

Kansas City Missouri
March 18, 2019

Selected Financial Data – Five-Year Summary for the Years 2018, 2017, 2016, 2015, and 2014

Selected Financial Data – Five-Year Summary

Amounts in thousands, except for share data, historical exchange rates, and number of employees.

	2018	2017	2016	2015	2014
Net sales	$ 201,210	$ 167,957	$ 168,021	$ 178,595	$ 200,713
Net income (loss)	$ 2,639	$ (2,326)	$ (2,281)	$ 8,604	$ 6,877
Earnings (loss) per common share:					
Basic	$ 2.21	$ (1.94)	$ (1.88)	$ 6.97	$ 5.60
Diluted	$ 2.21	$ (1.94)	$ (1.88)	$ 6.95	$ 5.56
Common shares outstanding	1,196,187	1,196,261	1,200,021	1,237,220	1,237,379
Total assets	$ 130,188	$ 139,894	$ 104,665	$ 118,596	$ 120,022
Long-term debt	$ 21,478	$ 23,562	$ 4,558	$ 5,003	$ 1,991
Shareholders' investment	$ 27,628	$ 27,981	$ 30,466	$ 31,747	$ 24,139
Working capital	$ 9,352	$ 12,621	$ 7,538	$ 9,270	$ 4,411
Book value per common share	$ 23.10	$ 23.39	$ 25.39	$ 25.66	$ 19.51
Average number of employees	967	928	918	954	976
Historical exchange rates (Euro to U.S. Dollar):					
Year end	$ 1.14	$ 1.20	$ 1.05	$ 1.09	$ 1.22
Year end average	$ 1.18	$ 1.13	$ 1.11	$ 1.11	$ 1.33

Financial Highlights by Quarter (Unaudited) and Market Information by Quarter for the Years 2018 and 2017

Financial Highlights by Quarter, Unaudited

Amounts in thousands, except for share data.

	Quarter Ended March 31		Quarter Ended June 30		Quarter Ended September 30		Quarter Ended December 31	
	2018	**2017**	**2018**	**2017**	**2018**	**2017**	**2018**	**2017**
United States:								
Net sales	$ 32,633	$ 27,419	$ 40,072	$ 27,065	$ 33,197	$ 34,897	$ 31,188	$ 30,926
Gross profit	$ 6,460	$ 5,999	$ 7,718	$ 5,454	$ 7,733	$ 8,240	$ 6,803	$ 6,812
Net income (loss)	$ 854	$ 527	$ 1,261	$ 324	$ 1,574	$ 2,000	$ 997	$ (2,994)
The Netherlands:								
Net sales	$ 13,608	$ 10,253	$ 22,896	$ 12,761	$ 14,107	$ 13,541	$ 14,730	$ 11,607
Gross profit	$ 5,792	$ 4,539	$ 6,740	$ 6,227	$ 4,810	$ 5,759	$ 4,860	$ 5,772
Net income (loss)	$ (497)	$ (724)	$ 306	$ 313	$ (740)	$ (191)	$ (1,152)	$ (1,748)
Consolidated:								
Net sales	$ 46,078	$ 37,611	$ 62,705	$ 39,630	$ 46,809	$ 48,271	$ 45,618	$ 42,445
Gross profit	$ 12,276	$ 10,594	$ 14,465	$ 11,696	$ 12,533	$ 13,997	$ 11,676	$ 12,683
Net income (loss)	$ 382	$ (143)	$ 1,573	$ 653	$ 824	$ 1,806	$ (140)	$ (4,642)
Earnings (loss) per common share:								
Basic	$ .32	$ (.12)	$ 1.31	$ .55	$ .69	$ 1.51	$ (.12)	$ (3.88)
Diluted	$ .32	$ (.12)	$ 1.31	$ .55	$ .69	$ 1.51	$ (.12)	$ (3.88)

Market Information by Quarter

	2018 Quarter Ended				**2017** Quarter Ended			
	Mar. 31	June 30	Sept. 30	Dec. 31	Mar. 31	June 30	Sept. 30	Dec. 31
Market price of stock:								
High	$ 39.40	$ 34.00	$ 31.05	$ 31.00	$ 30.00	$ 30.25	$ 35.00	$ 40.00
Low	$ 32.81	$ 29.51	$ 27.55	$ 25.00	$ 26.60	$ 27.52	$ 28.52	$ 32.55

The Company's common stock is traded over-the-counter based on quotes obtained by market makers from OTC Markets Group. The market price data was obtained from NASDAQ for 2018 and 2017.

CORPORATE PROFILE

Headquarters

Paul Mueller Company, Inc.
1600 West Phelps Street
Springfield, Missouri 65802, U.S.A.

General Information

Paul Mueller Company was founded in 1940 and incorporated in 1946 in Missouri. Mueller® products and services are used in a wide variety of industries including animal health, beverage, brewing, chemical, dairy farm, dairy processing, food, heat transfer, HVAC, industrial construction, oil and gas, personal care, pharmaceutical, pure water, tank fabrication, and wine.

Business Segments

Dairy Farm Equipment
Milk cooling and storage, refrigeration products, and heat recovery equipment.

Field Fabrication
Large field-erected tanks, equipment installation, process piping, retrofit and/or repair of process systems, turnkey design, and construction of complete processing plants.

Industrial Equipment
Standard and customized stainless steel and alloy processing and storage tanks, pure water equipment, and heat transfer products.

Transportation
Delivery of products and components to customers and field fabrication sites, backhauls of material, and contract carriage.

SHAREHOLDER INFORMATION

Board of Directors

** **CURTIS L. DINAN**
Senior Vice President, Commercial –
ONE Gas, Inc.

* ** *** **JOHN J. GHIRARDELLI**
Chairman of the Board
Chairman of Tech Spa Inc.
CEO – Keystone Digital

* **DAVID T. MOORE**
President and CEO

*** **JEAN L. MORRIS**
Marketing and Design Coordinator –
Big Cedar Lodge

*** **JOHN P. (JACK) STACK**
Chairman, President, and CEO –
SRC Holdings Corporation

* ** **LEE J. VIOREL, III**
Member –
Lowther Johnson Attorneys at Law, L.L.C.

* Executive Committee Member
** Audit Committee Member
*** Nominating and Compensation Committee Member

Officers

DAVID T. MOORE
President and CEO

KENNETH E. JEFFRIES
Chief Financial Officer

DENISE M. SILVEY
Secretary

Subsidiaries

MUELLER FIELD OPERATIONS, INC.

Officers

JEREMY W. ROGLES – President

KENNETH E. JEFFRIES – Vice President

MICHAEL R. PAYNE – Secretary

PATRICIA K. WEBSTER – Treasurer

MUELLER TRANSPORTATION, INC.

Officers

JEREMY W. ROGLES – President

KENNETH E. JEFFRIES – Controller

MICHAEL R. PAYNE – Secretary

PATRICIA K. WEBSTER – Treasurer

MUELLER B.V.

Managing Director

PAUL MUELLER COMPANY

Transfer Agent

Computershare, Inc.
250 Royall Street
Canton, MA 02021

Devoted *People*

In 2018, Paul Mueller Company completed a large pharmaceutical project for a global company that supplies life-saving medicines to their customers. The effort spanned more than three years from start to finish and was so big in scope, manufacturing was spread across three different bays in the Springfield, Missouri, facility.

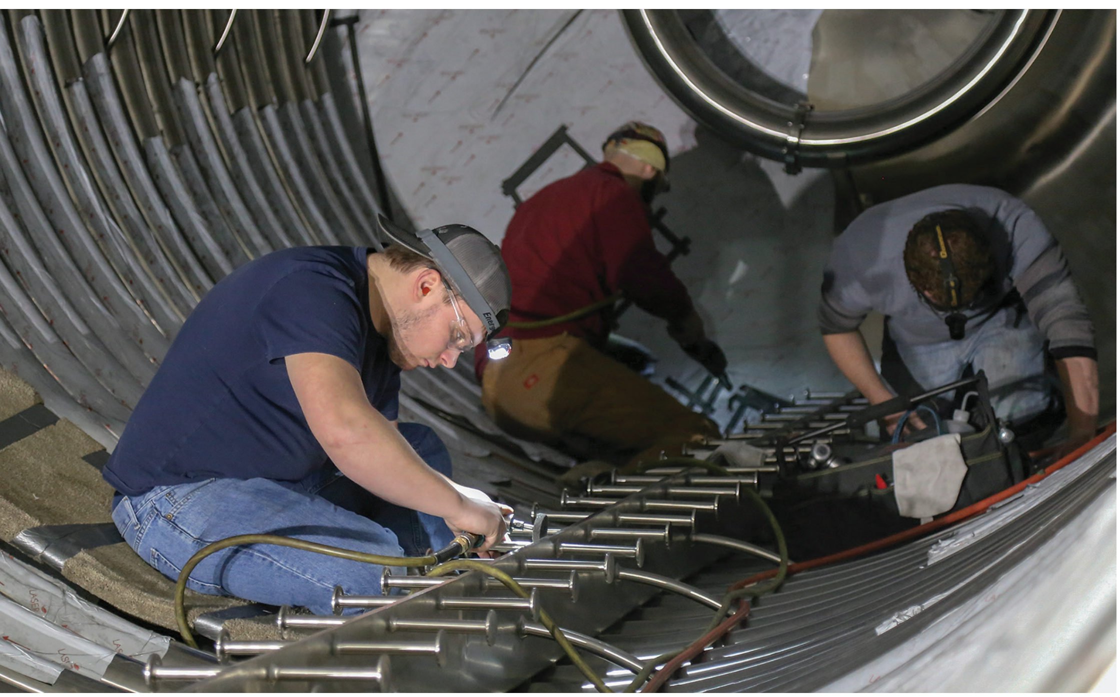
"From the start, it was clear the project would take great collaboration and planning," said Mueller BioPharm Project Manager Anna Wallis. "We saw co-workers from all parts of the company step up to the plate to help where they could. It is that kind of dedication to and passion for customer service that helped make this project successful!"

The skids were built in Bay 3 and the tank work spread to Bay 7 and Bay 8. Anna continued, "The work was complex and often space restricted. The guys had to work in very tight areas, sometimes laying on their stomachs welding and putting it together."

The project used capabilities from across the company, including the Component Products, Heat Transfer, Mueller Field Operations, Inc., and Mueller Transportation, Inc. groups. While the project posed some unique challenges, our co-workers banded together to do the job well and meet the customer's schedule, proving that teamwork always wins!

"We saw co-workers from all parts of the company step up to the plate to help where they could."
— Anna Wallis

Mueller co-worker Anna Wallis.

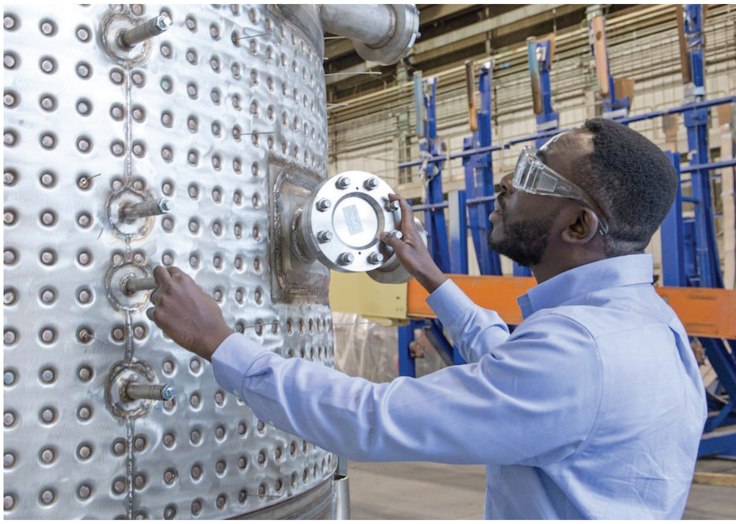


Mueller team members working inside one of the project's vessels.

Entrepreneurial *People*

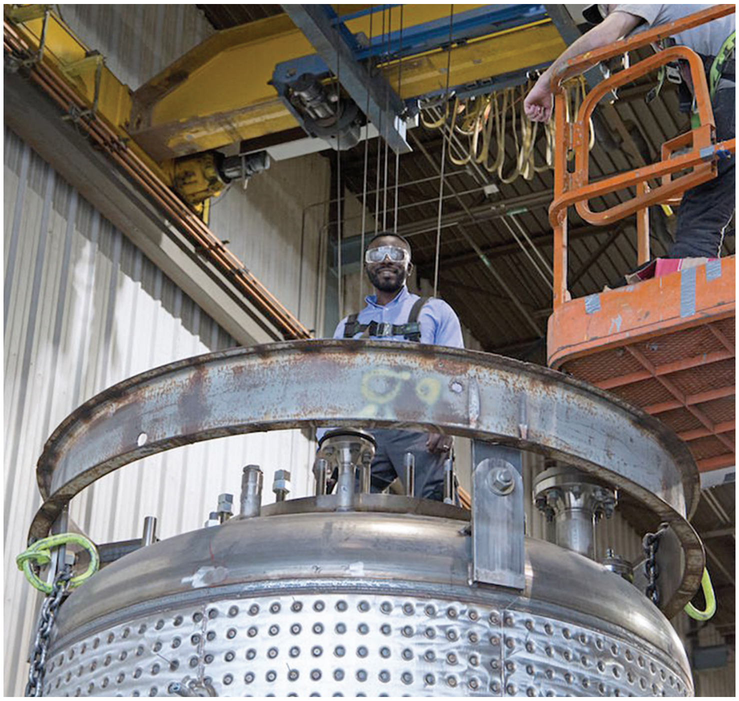
Dr. Sola Talabi is a nuclear power consultant with Pittsburgh Technical LLC and Carnegie Mellon University. Dr. Talabi approached Paul Mueller Company with an idea to design a small modular reactor for use in an experiment, to prove the efficiency of smaller reactors over larger ones in containing nuclear hazards. After reaching out to multiple equipment suppliers, Dr. Talabi was impressed by Mueller Regional Sales Manager Gary Martin.

"Paul Mueller Company was very responsive. Given the complex performance requirements, we knew we needed a very experienced fabricator and Paul Mueller Company was able to apply their vast expertise to consult on this project. I felt like we were working together as a team," said Dr. Talabi.



Dr. Sola Talabi at Paul Mueller Company.

The Mueller team was able to provide a specialized chemical reactor that met all of Dr. Talabi's needs. The design included Mueller Temp-Plate® heat transfer surface, allowing the vessel to reach up to 500°F at 200 psi, and removable inserts to modify its volume. Multiple view ports were welded in precise alignment to allow lasers beamed through the site glasses to intersect inside the tank so the researchers could observe the simulated radionuclide particles. The manufacturing team knew to use a specific type of glass on the ports to withstand high temperatures and pressures without breaking or fogging.



After about a year of tests and research using the Paul Mueller Company-built test reactor, Dr. Sola Talabi was able to provide proof that small modular reactors are able to self-contain radionuclide hazards better than larger ones. This evidence will be very beneficial as the nuclear energy industry grows. The end goal is to make nuclear energy more accessible and deployable for special purposes, including remote locations, emergency power, and distributed generation in emerging nations.

Read the entire case study here:
https://www.paulmueller.com/case-studies/chemical/complex-equipment-design-for-a-chemical-project

PAUL MUELLER COMPANY

PAUL MUELLER, OUR FOUNDER

At Paul Mueller Company, we are united by a belief in quality that works for life. Our goal is to have lasting impact with every piece of processing equipment we build. This collective vision has led us from a small sheet metal shop into a global supplier of heating, cooling, processing, and storage solutions. Our equipment allows farmers, brewers, and engineers to keep their products fresh and their inventory strong. Whether our equipment preserves milk in rural areas or helps manufacture medicine with broad health benefits, we are making an impact across the globe.

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