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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **October 31, 2019**

PQ Group Holdings Inc.

Commission File Number: 001-38221

Delaware	**81-3406833**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
300 Lindenwood Drive	
Malvern, Pennsylvania	**19355**
(Address of principal executive offices)	(Zip Code)

(610) 651-4400
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading symbol	Name of each exchange on which registered
Common stock, par value $0.01 per share	PQG	New York Stock Exchange

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☐

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

Item 2.02 Results of Operations and Financial Condition.

On October 31, 2019, PQ Group Holdings Inc. issued a press release announcing the reporting of its financial results for the quarter ended September 30, 2019. A copy of the press release is furnished with this Current Report on Form 8-K as Exhibit 99.1 and is incorporated herein by reference.

The information in this Current Report on Form 8-K (including the exhibit attached hereto) shall not be deemed "filed" for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that Section. The information in this Current Report on Form 8-K (including the exhibit attached hereto) shall not be deemed incorporated by reference into any filing or other document under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing or document.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press release issued by PQ Group Holdings Inc. announcing financial results for the quarter ended September 30, 2019
104	The cover page from this Current Report on Form 8-K of PQ Group Holdings Inc., formatted in Inline XBRL and included as Exhibit 101

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

PQ GROUP HOLDINGS INC.
(Registrant)

Date: October 31, 2019 By /s/ MICHAEL CREWS
Michael Crews
Executive Vice President and Chief Financial Officer

Exhibit 99.1

PQ Group Reports Strong Third Quarter 2019 Results
88% Higher Net Income and 17% Growth in Adjusted EBITDA Driven by Catalysts Performance

- Sales of $423.8 million declined 0.8%; increased 0.4% on constant currency basis;
- Net income of $26.7 million with diluted EPS of $0.20; Adjusted net income of $48.3 million with Adjusted diluted EPS of $0.36;
- Adjusted EBITDA of $137.7 million increased 16.6%, or 17.7% on a constant currency basis;
- Adjusted EBITDA margin expanded in three of four business segments, delivering a second consecutive quarter above 28%;
- Net cash provided by operating activities of $121.9 million and adjusted free cash flow of $99.6 million in the quarter; on track to meet or exceed deleveraging target;
- Entered into an agreement with INEOS to expand the Polyolefin Catalyst portfolio offering

MALVERN, PA, October 31, 2019 -- PQ Group Holdings Inc. (NYSE:PQG) ("PQ" or the "Company") reported results for the third quarter ended September 30, 2019. Sales of $423.8 million were down 0.8% versus the same period in 2018, but increased 0.4% on a constant currency basis, as strong results in Catalysts and higher average pricing across all business segments more than offset lower sales volume and the pass-through of lower sulfur costs. Net income was $26.7 million with $0.20 diluted EPS and Adjusted net income was $48.3 million with $0.36 Adjusted diluted EPS. Adjusted EBITDA was $137.7 million, up 16.6%, or 17.7% on a constant currency basis, led by the Catalysts business coupled with solid results in Performance Materials and Refining Services. Adjusted EBITDA margin rose by 310 basis points to 28.8%.

"We are pleased to have delivered another quarter of strong financial results with solid margin improvement as the team successfully implemented pricing actions and operational efficiency plans," commented Belgacem Chariag, PQ President and Chief Executive Officer. "We are focused on multiple opportunities to optimize and broaden our product portfolio, and we are excited to partner with INEOS to expand our polyethylene catalyst offerings to existing and new customers."

The financial results and outlook include non-GAAP financial measures. These non-GAAP measures are more fully described and are reconciled from the respective measures determined under GAAP in "Presentation of Non-GAAP Financial Measures" and the attached appendix tables.

Review of Segment Results

Refining Services

Sales of $118.3 million decreased 4.1% versus the same period in 2018 largely on the pass-through of lower sulfur costs. Adjusted EBITDA of $51.2 million was up 3.2% from improved customer and product sales mix.

Catalysts

Silica Catalyst sales of $25.6 million increased 57.1%, or 58.3% on a constant currency basis, versus the same period in 2018, largely driven by higher sales across the portfolio. Zeolyst JV sales rose 68.4% led by the strongest quarter in 2019 for hydrocracking catalysts coupled with accelerated orders for specialty catalysts. Adjusted EBITDA of $31.6 million increased 101.3%, or 102.5% on a constant currency basis, on strong sales and demand for higher margin products in both Silica Catalysts and the Zeolyst JV.

Performance Materials

Sales of $115.1 million decreased 0.3%, up 1.6% on a constant currency basis, and Adjusted EBITDA of $25.8 million increased 21.1%, or 22.5% on a constant currency basis versus the same period in 2018, due to continued higher pricing and favorable sales mix.

Performance Chemicals

Sales of $167.9 million decreased 3.9%, or 2.1% on a constant currency basis versus the same period in 2018 on softening demand for sodium silicate. Adjusted EBITDA of $36.8 million declined $5.0 million (12.0%), and $4.2 million (10.0%) on a constant currency basis, from the continued impact of lower sales volumes along with higher maintenance and logistics costs.

Cash Flows and Balance Sheet

For the nine months ended September 30, 2019, cash flows from operating activities increased to $181.9 million, as compared to $166.0 million for the same period in 2018. This increase was primarily driven by an increase in net income and favorable changes in working capital.

At September 30, 2019, the Company had cash and cash equivalents of $78.5 million and total debt outstanding of $2,043.3 million. During the quarter, the Company repaid $100 million of debt which reduced the net debt to Adjusted EBITDA ratio to 4.1x as of September 30, 2019. In October, the Company restructured its cross-currency swap portfolio, which generated $38 million in cash that will be used for additional debt repayment.

2019 Financial Outlook

The Company is updating its 2019 guidance to reflect continued weak demand for Performance Chemicals in the United States and Europe, primarily for sodium silicate, that is only partially offset by improved results in the rest of the portfolio:

- Sales of $1,560 million to $1,580 million, updated from $1,580 million to $1,600 million
- Adjusted EBITDA at the bottom end or slightly below the $470 million to $485 million range, unchanged
- Adjusted diluted EPS of approximately $0.84 to $0.87, updated from $0.77 to $0.93
- Adjusted free cash flow in the range of $125 million to $145 million, unchanged [(1)]

We have reduced our capital expenditures range to $130 million to $135 million, down from $140 million to $150 million. We are also raising our debt repayment target to $170 million to $190 million, which includes the benefit from the cross-currency swap proceeds. This is expected to reduce the net debt to Adjusted EBITDA ratio to nearly 4x by year-end.

(1) Excludes $28 million of proceeds from the non-core product line sale in 2Q 2019 and $38 million swap restructuring in 4Q 2019.

Conference Call and Webcast Details

On Thursday, October 31, 2019, PQ management will review the results during a conference call and audio-only webcast scheduled for 11:00 a.m. Eastern Time.

Conference Call: Investors may listen to the conference call live via telephone by dialing 1 (877) 883-0383 (domestic) or 1 (412) 902-6506 (international) and use the participant code 8724962.

Webcast: An audio-only live webcast of the conference call and presentation materials can be accessed at http://investor.pqcorp.com.

A replay of the conference call/webcast will be made available at http://investor.pqcorp.com/events-presentations.

Investor Contact:
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About PQ Group Holdings Inc.

PQ Group Holdings Inc. and subsidiaries is a leading integrated and innovative global provider of specialty catalysts, materials, chemicals and services. We support customers globally through our strategically located network of manufacturing facilities. We believe that our products, which are predominantly inorganic, and services contribute to improving the sustainability of the environment.

We have four uniquely positioned specialty businesses: ***Refining Services*** provides sulfuric acid recycling to the North American refining industry; ***Catalysts*** serves the packaging and engineering plastics and the global refining, petrochemical and emissions control industries; ***Performance Materials*** produces transportation reflective safety markings for roads and airports; and ***Performance Chemicals*** supplies diverse product end uses, including personal and industrial cleaning products, fuel-efficient tires, surface coatings, and food and beverage products.

We serve over 4,000 customers globally across many end uses and operate over 70 manufacturing facilities which are strategically located across six continents. For more information, see our website at https://www.pqcorp.com.

Presentation of Non-GAAP Financial Measures

In addition to the results provided in accordance with U.S. generally accepted accounting principles ("GAAP") throughout this press release, the Company has provided non-GAAP financial measures—Adjusted EBITDA, Adjusted EBITDA margin, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA—which present results on a basis adjusted for certain items. The Company uses these non-GAAP financial measures for business planning purposes and in measuring its performance relative to that of its competitors. The Company believes that these non-GAAP financial measures are useful financial metrics to assess its operating performance from period-to-period by excluding certain items that the Company believes are not representative of its core business. These non-GAAP financial measures are not intended to replace, and should not be considered superior to, the presentation of the Company's financial results in accordance with GAAP. The use of the terms Adjusted EBITDA, Adjusted EBITDA margin, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA may differ from similar measures reported by other companies and may not be comparable to other similarly titled measures. Adjusted EBITDA, Adjusted free cash flow, Adjusted net income, Adjusted EPS, Adjusted diluted EPS, constant currency sales and constant currency Adjusted EBITDA are reconciled from the respective measures under GAAP in the appendix below.

In discussing our operating results, the term currency exchange rates refers to the currency exchange rates we use to convert the operating results for all countries where the functional currency is not the U.S. dollar. We calculate constant currency sales and constant currency Adjusted EBITDA by translating current period results at the prior period's currency exchange rates. When we refer to constant currency sales and constant currency Adjusted EBITDA, this means sales and Adjusted EBITDA without the impact of the currency exchange rate fluctuations from period-to period.

The Company is not able to provide a reconciliation of the Company's non-GAAP financial guidance to the corresponding GAAP measures without unreasonable effort because of the inherent difficulty in forecasting and quantifying certain amounts necessary for such a reconciliation such as certain non-cash, nonrecurring or other items that are included in net income and EBITDA as well as the related tax impacts of these items and asset dispositions / acquisitions and changes in foreign currency exchange rates that are included in cash flow, due to the uncertainty and variability of the nature and amount of these future charges and costs.

Zeolyst Joint Venture

The Company's zeolite catalysts product group operates through its Zeolyst Joint Venture, which is accounted for as an equity method investment in accordance with GAAP. The presentation of the Zeolyst Joint Venture's sales represents 50% of the sales of the Zeolyst Joint Venture. The Company does not record sales by the Zeolyst Joint Venture as revenue and such sales are not consolidated within the Company's results of operations. However, the Company's Adjusted EBITDA reflects the share of earnings of the Zeolyst Joint Venture that have been recorded as equity in net income from affiliated companies in the Company's consolidated statements of income for such periods and includes Zeolyst Joint Venture adjustments on a proportionate basis based on the Company's 50% ownership interest. Accordingly, the Company's Adjusted EBITDA margins are calculated including 50% of the sales of the Zeolyst Joint Venture for the relevant periods in the denominator.

Note on Forward-Looking Statements

Some of the information contained in this press release constitutes "forward-looking statements." Forward-looking statements can be identified by words such as "anticipates," "intends," "plans," "seeks," "believes," "estimates," "expects," "projects" and similar references to future periods. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Examples of forward-looking statements include, but are not limited to, statements regarding our future results of operations, financial condition, liquidity, prospects, growth, strategies, product and service offerings and 2019 outlook. Our actual results may differ materially from those contemplated by the forward-looking statements. We caution you, therefore, against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, regional, national or global political, economic, business, competitive, market and regulatory conditions, including tariffs and trade disputes, currency exchange rates and other factors, including those described in the sections titled "Risk Factors" and "Management Discussion & Analysis of Financial Condition and Results of Operations" in our filings with the SEC, which are available on the SEC's website at www.sec.gov. These forward-looking statements speak only as of the date of this release. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by applicable law.

PQ Corporation

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME

	Three months ended September 30,			Nine months ended September 30,		
	2019	2018	% Change	2019	2018	% Change
	(in millions, except percentages, share and per share amounts)					
Sales	$ 423.8	$ 427.2	(0.8)%	$ 1,214.7	$ 1,228.1	(1.1)%
Cost of goods sold	310.9	319.7	(2.8)%	905.4	934.1	(3.1)%
Gross profit	112.9	107.5	5.0 %	309.3	294.0	5.2 %
Selling, general and administrative expenses	39.5	42.1	(6.2)%	123.6	126.2	(2.1)%
Other operating expense, net	15.7	16.5	(4.8)%	28.4	41.7	(31.9)%
Operating income	57.6	48.9	17.8 %	157.3	126.1	24.7 %
Equity in net (income) from affiliated companies	(17.3)	(5.6)	208.9 %	(31.6)	(31.1)	1.6 %
Interest expense, net	27.7	28.2	(1.8)%	84.9	84.6	0.4 %
Debt extinguishment costs	1.8	0.9	100.0 %	1.8	6.7	(73.1)%
Other expense, net	1.9	2.5	(24.0)%	1.8	13.1	(86.3)%
Income before income taxes and noncontrolling interest	43.5	22.9	90.0 %	100.4	52.8	90.2 %
Provision for income taxes[1]	16.7	8.5	96.5 %	39.5	21.6	82.9 %
Effective tax rate	38.4%	37.0%		39.3%	40.9%	
Net income	26.8	14.4	86.1 %	60.9	31.2	95.2 %
Less: Net income attributable to the noncontrolling interest	0.1	0.2	(50.0)%	0.5	1.0	(50.0)%
Net income attributable to PQ Group Holdings Inc.	$ 26.7	$ 14.2	88.0 %	$ 60.4	$ 30.2	100.0 %
Earnings per share:						
Basic earnings per share	$ 0.20	$ 0.11		$ 0.45	$ 0.23	
Diluted earnings per share	$ 0.20	$ 0.11		$ 0.45	$ 0.22	
Weighted average shares outstanding:						
Basic	134,511,819	133,336,352		134,213,571	133,237,653	
Diluted	135,649,710	134,576,162		135,305,370	134,223,628	

(1) Net of a $6.2 million and $13.9 million provision for Global Intangible Low-Taxed Income ("GILTI") for the three and nine months ended September 30, 2019, respectively. Net of a $6.2 million and $9.8 million provision for GILTI for the three and nine months ended September 30, 2018, respectively, and a $2.5 million and $1.4 million provisional adjustment for the impact of the U.S. Tax Cuts and Jobs Act of 2017 for the three and nine months ended September 30, 2018.

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(in millions, except share and per share amounts)

	September 30, 2019	December 31, 2018
ASSETS		
Cash and cash equivalents	$ 78.5	$ 57.9
Accounts receivable, net	214.6	196.8
Inventories, net	259.8	264.7
Prepaid and other current assets	39.1	39.2
Total current assets	592.0	558.6
Investments in affiliated companies	477.1	468.2
Property, plant and equipment, net	1,178.5	1,209.0
Goodwill	1,251.3	1,254.9
Other intangible assets, net	683.3	728.4
Right-of-use lease assets	54.2	—
Other long-term assets	129.1	108.3
Total assets	$ 4,365.5	$ 4,327.4
LIABILITIES		
Notes payable and current maturities of long-term debt	$ 8.2	$ 7.2
Accounts payable	132.1	148.4
Operating lease liabilities—current	14.1	—
Accrued liabilities	108.4	100.0
Total current liabilities	262.8	255.6
Long-term debt, excluding current portion	2,006.7	2,106.7
Deferred income taxes	214.9	196.1
Operating lease liabilities—noncurrent	38.5	—
Other long-term liabilities	106.0	104.8
Total liabilities	2,628.9	2,663.2
Commitments and contingencies		
EQUITY		
Common stock ($0.01 par); authorized shares 450,000,000; issued shares 136,469,863 and 135,758,269 on September 30, 2019 and December 31, 2018, respectively; outstanding shares 136,157,186 and 135,592,045 on September 30, 2019 and December 31, 2018, respectively	1.4	1.4
Preferred stock ($0.01 par); authorized shares 50,000,000; no shares issued or outstanding on September 30, 2019 and December 31, 2018	—	—
Additional paid-in capital	1,692.2	1,674.7
Retained earnings	83.9	25.5
Treasury stock, at cost; shares 312,677 and 166,224 on September 30, 2019 and December 31, 2018, respectively	(5.2)	(2.9)
Accumulated other comprehensive loss	(40.7)	(39.1)
Total PQ Group Holdings Inc. equity	1,731.6	1,659.6
Noncontrolling interest	5.0	4.6
Total equity	1,736.6	1,664.2
Total liabilities and equity	$ 4,365.5	$ 4,327.4

PQ GROUP HOLDINGS INC. AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

	Nine months ended September 30,	
	2019	2018
	(in millions)	
Cash flows from operating activities:		
Net income	$ 60.9	$ 31.2
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	97.1	99.5
Amortization	38.1	39.8
Amortization of inventory step-up	—	1.6
Amortization of deferred financing costs and original issue discount	4.5	4.6
Debt extinguishment costs	1.8	4.6
Foreign currency exchange loss	5.4	15.3
Deferred income tax provision	16.8	1.5
Net (gain) loss on asset disposals	(7.7)	11.1
Stock compensation	13.6	11.9
Equity in net (income) from affiliated companies	(31.6)	(31.1)
Dividends received from affiliated companies	20.1	35.9
Net interest income on swaps designated as net investment hedges	(8.4)	(4.3)
Other, net	(7.2)	(12.5)
Working capital changes that provided (used) cash, excluding the effect of acquisitions and dispositions:		
Receivables	(22.5)	(43.1)
Inventories	(1.8)	8.8
Prepaids and other current assets	0.3	(1.6)
Accounts payable	(4.1)	(7.6)
Accrued liabilities	6.6	0.4
Net cash provided by operating activities	181.9	166.0
Cash flows from investing activities:		
Purchases of property, plant and equipment	(91.7)	(95.3)
Investment in affiliated companies	—	(5.0)
Business combinations, net of cash acquired	—	(1.0)
Proceeds from sale of product line	28.0	—
Net interest proceeds on swaps designated as net investment hedges	8.4	4.3
Other, net	0.6	1.2
Net cash used in investing activities	(54.7)	(95.8)
Cash flows from financing activities:		
Draw down of revolving credit facilities	161.6	139.6
Repayments of revolving credit facilities	(160.3)	(163.1)
Issuance of long-term debt	—	1,267.0
Debt issuance costs	—	(6.2)
Repayments of long-term debt	(105.8)	(1,313.8)
Stock repurchases	(2.2)	(0.8)
Proceeds from stock options exercised	4.0	—
Other, net	(0.5)	(0.5)
Net cash used in financing activities	(103.2)	(77.8)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3.4)	(1.6)
Net change in cash, cash equivalents and restricted cash	20.6	(9.2)
Cash, cash equivalents and restricted cash at beginning of period	59.7	67.2
Cash, cash equivalents and restricted cash at end of period	$ 80.3	$ 58.0

Appendix Table A-1: Reconciliation of Net Income to Segment Adjusted EBITDA

	Three months ended September 30,		Nine months ended September 30,	
	2019	2018	2019	2018
	(in millions)			
Reconciliation of net income attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA				
Net income attributable to PQ Group Holdings Inc.	$ 26.7	$ 14.2	$ 60.4	$ 30.2
Provision for income taxes	16.7	8.5	39.5	21.6
Interest expense, net	27.7	28.2	84.9	84.6
Depreciation and amortization	44.2	43.8	135.2	139.3
EBITDA	115.3	94.7	320.0	275.7
Joint venture depreciation, amortization and interest[a]	3.7	3.3	11.2	9.2
Amortization of investment in affiliate step-up[b]	1.7	1.7	5.9	5.0
Amortization of inventory step-up[c]	—	—	—	1.6
Debt extinguishment costs	1.8	0.9	1.8	6.7
Net (gain) loss on asset disposals[d]	1.1	5.2	(7.7)	11.1
Foreign currency exchange loss[e]	4.5	3.5	5.4	15.3
LIFO expense[f]	0.5	0.9	10.8	5.9
Transaction and other related costs[g]	0.7	0.2	1.7	0.9
Equity-based compensation	4.8	4.3	13.6	11.9
Restructuring, integration and business optimization expenses[h]	0.7	2.2	1.4	5.7
Defined benefit pension plan cost [i]	0.8	0.1	2.4	0.3
Other[j]	2.1	1.1	4.7	5.6
Adjusted EBITDA	137.7	118.1	371.2	354.9
Unallocated corporate expenses	7.7	10.3	28.0	27.3
Segment Adjusted EBITDA	$ 145.4	$ 128.4	$ 399.2	$ 382.2

Descriptions to PQ Non-GAAP Reconciliations

(a) We use Adjusted EBITDA as a performance measure to evaluate our financial results. Because our Catalysts segment includes our 50% interest in our Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of our Zeolyst Joint Venture.

(b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in our Zeolyst Joint Venture as a result of the combination of the businesses of PQ Holdings Inc. and Eco Services Operations LLC in May 2016 (the "Business Combination"). We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of our Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with fixed assets and intangible assets, including customer relationships and technical know-how.

(c) As a result of the Sovitec acquisition there was a step-up in the fair value of inventory, which is amortized through cost of goods sold in the statements of income.

(d) When asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use. During the nine months ended September 30, 2019, net (gain) loss on asset disposals reflects the gain related to the sale of a non-core product line.

(e) Reflects the exclusion of the foreign currency transaction gains and losses in the statements of income primarily related to the non-permanent intercompany debt denominated in local currency translated to U.S. dollars during 2019 and primarily related to the Euro denominated term loan (which was settled as part of the February 2018 term loan refinancing) and the non-permanent intercompany debt denominated in local currency translated to U.S. dollars during 2018.

(f) Represents non-cash adjustments to the Company's LIFO reserves for certain inventories in the U.S. that are valued using the LIFO method, which we believe provides a means of comparison to other companies that may not use the same basis of accounting for inventories.

(g) Relates to certain transaction costs, including debt financing, due diligence and other costs related to transactions that are completed, pending or abandoned, that we believe are not representative of our ongoing business operations.

(h) Includes the impact of restructuring, integration and business optimization expenses which are incremental costs that are not representative of our ongoing business operations.

(i) Represents adjustments for defined benefit pension plan costs in our statements of income. More than two-thirds of our defined benefit pension plan obligations are under defined benefit pension plans that are frozen, and the remaining obligations primarily relate to plans operated in certain of our non-U.S. locations that, pursuant to jurisdictional requirements, cannot be frozen. As such, we do not view such expenses as core to our ongoing business operations.

(j) Other costs consist of certain expenses that are not core to our ongoing business operations, including environmental remediation-related costs associated with the legacy operations of our business prior to the Business Combination, capital and franchise taxes, non-cash asset retirement obligation accretion and the initial implementation of procedures to comply with Section 404 of the Sarbanes-Oxley Act. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

Appendix Table A-2: Reconciliation of Net Income to Adjusted Net Income[(1)]

	Three months ended September 30,					
	2019			2018		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Net income before non-controlling interest	$ 43.5	$ 16.7	$ 26.8	$ 22.9	$ 8.5	$ 14.4
Less: Net income attributable to non-controlling interest	0.1	—	0.1	0.2	—	0.2
Net income attributable to PQ Group Holdings Inc.	43.4	16.7	26.7	22.7	8.5	14.2
Earnings per share:						
Basic earnings per share			$ 0.20			$ 0.11
Diluted earnings per share			$ 0.20			$ 0.11
Net income attributable to PQ Group Holdings Inc.	$ 43.4	$ 16.7	$ 26.7	$ 22.7	$ 8.5	$ 14.2
Amortization of investment in affiliate step-up[(b)]	1.7	0.6	1.1	1.7	0.8	0.9
Debt extinguishment costs	1.8	0.6	1.2	0.9	0.7	0.2
Net loss on asset disposals[(d)]	1.1	0.3	0.8	5.2	2.3	2.9
Foreign currency exchange loss[(e)]	4.5	0.6	3.9	3.5	(0.5)	4.0
LIFO expense[(f)]	0.5	0.1	0.4	0.9	0.6	0.3
Transaction and other related costs[(g)]	0.7	0.3	0.4	0.2	0.1	0.1
Equity-based compensation	4.8	1.6	3.2	4.3	2.1	2.2
Restructuring, integration and business optimization expenses[(h)]	0.7	0.2	0.5	2.2	1.0	1.2
Defined benefit plan pension cost (benefit)[(i)]	0.8	0.3	0.5	0.1	—	0.1
Other[(j)]	2.1	0.7	1.4	1.1	0.7	0.4
Adjusted Net Income, including non-cash GILTI tax	62.1	22.0	40.1	42.8	16.3	26.5
Impact of non-cash GILTI tax[(2)]	—	(8.2)	8.2	—	(11.4)	11.4
Impact of tax reform[(3)]	—	—	—	—	(2.5)	(2.5)
Adjusted Net Income[(1)]	$ 62.1	$ 13.8	$ 48.3	$ 42.8	$ 2.4	$ 35.4
Adjusted earnings per share:						
Adjusted basic earnings per share			$ 0.36			$ 0.27
Adjusted diluted earnings per share			$ 0.36			$ 0.26
Weighted average shares outstanding:						
Basic			134,511,819			133,336,352
Diluted			135,649,710			134,576,162

	Nine months ended September 30,					
	2019			2018		
	Pre-tax	Tax expense (benefit)	After-tax	Pre-tax	Tax expense (benefit)	After-tax
	(in millions)					
Net income before non-controlling interest	$ 100.4	$ 39.5	$ 60.9	$ 52.8	$ 21.6	$ 31.2
Less: Net income attributable to non-controlling interest	0.5	—	0.5	1.0	—	1.0
Net income attributable to PQ Group Holdings Inc.	99.9	39.5	60.4	51.8	21.6	30.2
Earnings per share:						
Basic earnings per share			$ 0.45			$ 0.23
Diluted earnings per share			$ 0.45			$ 0.22
Net income attributable to PQ Group Holdings Inc.	$ 99.9	$ 39.5	$ 60.4	$ 51.8	$ 21.6	$ 30.2
Amortization of investment in affiliate step-up[(b)]	5.9	2.1	3.8	5.0	1.9	3.1
Amortization of inventory step-up[(c)]	—	—	—	1.6	0.6	1.0
Debt extinguishment costs	1.8	0.6	1.2	6.7	2.4	4.3
Net (gain) loss on asset disposals[(d)]	(7.7)	(1.6)	(6.1)	11.1	4.2	6.9
Foreign currency exchange loss[(e)]	5.4	(0.6)	6.0	15.3	3.3	12.0
LIFO expense[(f)]	10.8	3.8	7.0	5.9	2.3	3.6
Transaction and other related costs [(g)]	1.7	0.6	1.1	0.9	0.3	0.6
Equity-based compensation	13.6	4.8	8.8	11.9	4.6	7.3
Restructuring, integration and business optimization expenses [(h)]	1.4	0.5	0.9	5.7	2.2	3.5
Defined benefit plan pension cost[(i)]	2.4	0.8	1.6	0.3	0.1	0.2
Other[(j)]	4.7	1.5	3.2	5.6	2.3	3.3
Adjusted Net Income, including non-cash GILTI tax	139.9	52.0	87.9	121.8	45.8	76.0
Impact of non-cash GILTI tax [(2)]	—	(19.3)	19.3	—	(19.0)	19.0
Impact of tax reform[(3)]	—	—	—	—	(1.5)	(1.5)
Adjusted Net Income[(1)]	$ 139.9	$ 32.7	$ 107.2	$ 121.8	$ 25.3	$ 93.5
Adjusted earnings per share:						
Adjusted basic earnings per share			$ 0.80			$ 0.70
Adjusted diluted earnings per share			$ 0.79			$ 0.70
Weighted average shares outstanding:						
Basic			134,213,571			133,237,653
Diluted			135,305,370			134,223,628

See Appendix Table A-1 for Descriptions to PQ Non-GAAP Reconciliations in the table above.

(1) We define adjusted net income as net income attributable to PQ Group Holdings adjusted for non-operating income or expense and the impact of certain non-cash or other items that are included in net income that we do not consider indicative of our ongoing operating performance. Adjusted net income is presented as a key performance indicator as we believe it will enhance a prospective investor's understanding of our results of operations and financial condition. Adjusted net income may not be comparable with net income or adjusted net income as defined by other companies.

(2) Amount represents the impact to tax expense in net income before non-controlling interest and the related adjustments to net income associated with GILTI provisions of the Tax Cuts and Jobs Act of 2017 (“TCJA”). Beginning January 1, 2018, GILTI results in taxation of “excess of foreign earnings,” which is defined as amounts greater than a 10% rate of return on applicable foreign tangible asset basis. The Company is required to record incremental tax provision impact with respect to GILTI as a result of having historical U.S. net operating loss (“NOL”) amounts to offset the GILTI taxable income inclusion. This NOL utilization precludes us from recognizing foreign tax credits (“FTCs”) which would otherwise help offset the tax impacts of GILTI. No FTCs will be recognized with respect to GILTI until our cumulative NOL balance has been exhausted. Because the GILTI provision does not impact our cash taxes (given available U.S. NOLs), and given that we expect to recognize FTCs to offset GILTI impacts once the NOLs are exhausted, we do not view this item as a component of core operations.

(3) Represents the provisional adjustment for the impact of the TCJA and the Dutch Tax Plan 2019 recorded in net income.

Appendix Table A-3: Business Segment Sales and Adjusted EBITDA

	Three months ended September 30, 2019			Nine months ended September 30,		
	2019	2018	% Change	2019	2018	% Change
Sales:						
Refining Services	$ 118.3	$ 123.4	(4.1)%	$ 341.5	$ 336.2	1.6 %
Silica Catalysts	25.6	16.3	57.1 %	62.3	50.2	24.1 %
Performance Materials	115.1	115.4	(0.3)%	295.1	304.7	(3.2)%
Performance Chemicals	167.9	174.7	(3.9)%	526.2	548.4	(4.0)%
Eliminations	(3.1)	(2.6)		(10.4)	(11.4)	
Total sales	$ 423.8	$ 427.2	(0.8)%	$ 1,214.7	$ 1,228.1	(1.1)%
Zeolyst joint venture sales	$ 54.4	$ 32.3	68.4 %	$ 123.0	$ 120.2	2.3 %
Adjusted EBITDA:						
Refining Services	$ 51.2	$ 49.6	3.2 %	$ 133.7	$ 126.4	5.8 %
Catalysts	31.6	15.7	101.3 %	79.4	62.2	27.7 %
Performance Materials	25.8	21.3	21.1 %	65.5	61.9	5.8 %
Performance Chemicals	36.8	41.8	(12.0)%	120.6	131.7	(8.4)%
Total Segment Adjusted EBITDA	$ 145.4	$ 128.4	13.2 %	$ 399.2	$ 382.2	4.4 %
Corporate	(7.7)	(10.3)	(25.2)%	(28.0)	(27.3)	2.6 %
Total Adjusted EBITDA	$ 137.7	$ 118.1	16.6 %	$ 371.2	$ 354.9	4.6 %
Adjusted EBITDA Margin:						
Refining Services	43.3%	40.2%		39.2%	37.6%	
Catalysts[1]	39.5%	32.3%		42.8%	36.5%	
Performance Materials	22.4%	18.5%		22.2%	20.3%	
Performance Chemicals	21.9%	23.9%		22.9%	24.0%	
Total Adjusted EBITDA Margin[1]	28.8%	25.7%		27.7%	26.3%	

(1) Adjusted EBITDA margin calculation includes proportionate 50% share of sales from the Zeolyst joint venture.

Appendix Table A-4: Constant Currency Sales and Adjusted EBITDA

The tables below reflect the calculation of constant currency sales and constant currency Adjusted EBITDA by segment for the three and nine months ended September 30, 2019.

	Three months ended September 30, 2019			Three months ended September 30, 2018	
	As Reported	FX	Constant Currency	As Reported	% Change
	(in millions, except percentages)				
Sales:					
Refining Services	$ 118.3	$ —	$ 118.3	$ 123.4	(4.1)%
Silica Catalysts	25.6	0.2	25.8	16.3	58.3 %
Performance Materials	115.1	2.1	117.2	115.4	1.6 %
Performance Chemicals	167.9	3.1	171.0	174.7	(2.1)%
Eliminations	(3.1)	(0.2)	(3.3)	(2.6)	26.9 %
Total sales	$ 423.8	$ 5.2	$ 429.0	$ 427.2	0.4 %
Zeolyst joint venture sales	$ 54.4	$ —	$ 54.4	$ 32.3	68.4 %
Adjusted EBITDA:					
Refining Services	$ 51.2	$ —	$ 51.2	$ 49.6	3.2 %
Catalysts	31.6	0.2	31.8	15.7	102.5 %
Performance Materials	25.8	0.3	26.1	21.3	22.5 %
Performance Chemicals	36.8	0.8	37.6	41.8	(10.0)%
Total Segment Adjusted EBITDA	$ 145.4	$ 1.3	$ 146.7	$ 128.4	14.3 %
Corporate	(7.7)	—	(7.7)	(10.3)	(25.2)%
Total Adjusted EBITDA	$ 137.7	$ 1.3	$ 139.0	$ 118.1	17.7 %

	Nine months ended September 30, 2019			Nine months ended September 30, 2018	
	As Reported	FX	Constant Currency	As Reported	% Change
	(in millions, except percentages)				
Sales:					
Refining Services	$ 341.5	$ —	$ 341.5	$ 336.2	1.6 %
Silica Catalysts	62.3	1.4	63.7	50.2	26.9 %
Performance Materials	295.1	8.6	303.7	304.7	(0.3)%
Performance Chemicals	526.2	17.3	543.5	548.4	(0.9)%
Eliminations	(10.4)	(0.5)	(10.9)	(11.4)	(4.4)%
Total sales	$ 1,214.7	$ 26.8	$ 1,241.5	$ 1,228.1	1.1 %
Zeolyst joint venture sales	$ 123.0	$ —	$ 123.0	$ 120.2	2.3 %
Adjusted EBITDA:					
Refining Services	$ 133.7	$ —	$ 133.7	$ 126.4	5.8 %
Catalysts	79.4	0.9	80.3	62.2	29.1 %
Performance Materials	65.5	1.1	66.6	61.9	7.6 %
Performance Chemicals	120.6	4.6	125.2	131.7	(4.9)%
Total Segment Adjusted EBITDA	$ 399.2	$ 6.6	$ 405.8	$ 382.2	6.2 %
Corporate	(28.0)	(0.1)	(28.1)	(27.3)	2.9 %
Total Adjusted EBITDA	$ 371.2	$ 6.5	$ 377.7	$ 354.9	6.4 %

Appendix Table A-5: Adjusted Free Cash Flow

	Three months ended September 30, 2019	Three months ended September 30, 2018	Nine months ended September 30, 2019	Nine months ended September 30, 2018
	(in millions)			
Net cash provided by operating activities	$ 121.9	$ 115.9	$ 181.9	$ 166.0
Less:				
Purchases of property, plant and equipment[1]	(26.2)	(29.2)	(91.7)	(95.3)
Free cash flow	95.7	86.7	90.2	70.7
Adjustments to free cash flow:				
Net interest proceeds on currency swaps	3.9	4.3	8.4	4.3
Adjusted free cash flow[2]	$ 99.6	$ 91.0	$ 98.6	$ 75.0
Net cash used in investing activities[3]	$ (20.8)	$ (29.5)	$ (54.7)	$ (95.8)
Net cash used in financing activities	$ (102.9)	$ (82.5)	$ (103.2)	$ (77.8)

(1) Excludes the Company’s proportionate 50% share of capital expenditures from the Zeolyst joint venture.

(2) We define adjusted free cash flow as net cash provided by operating activities less purchases of property, plant and equipment, adjusted for net interest proceeds on swaps designated as net investment hedges. Adjusted free cash flow is a non-GAAP financial measure that we believe will enhance a prospective investor’s understanding of our ability to generate additional cash from operations, including the reduction in cash paid for interest related to our cross-currency interest rate swaps, and is an important financial measure for use in evaluating our financial performance. Our presentation of adjusted free cash flow is not intended to replace, and should not be considered superior to, the presentation of our net cash provided by operating activities determined in accordance with GAAP. Additionally, our definition of adjusted free cash flow is limited, in that it does not represent residual cash flows available for discretionary expenditures, due to the fact that the measure does not deduct the payments required for debt service and other contractual obligations or payments made for business acquisitions. Therefore, we believe it is important to view adjusted free cash flow as a measure that provides supplemental information to our consolidated statements of cash flows.

(3) Net cash used in investing activities includes purchases of property, plant and equipment and net interest proceeds on swaps designated as net investment hedges, which are also included in our computation of adjusted free cash flow.