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

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended March 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from______ to

Commission file number 001-12019

QUAKER CHEMICAL CORPORATION
(Exact name of Registrant as specified in its charter)

Pennsylvania **(State or other jurisdiction of incorporation or organization)**	**23-0993790** **(I.R.S. Employer Identification No.)**
901 E. Hector Street, Conshohocken, Pennsylvania **(Address of principal executive offices)**	**19428 – 2380** **(Zip Code)**

Registrant's telephone number, including area code: 610-832-4000

Not Applicable
Former name, former address and former fiscal year, if changed since last report.

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $1 par value	KWR	New York Stock Exchange

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

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
Emerging growth company ☐	

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

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Number of Shares of Common Stock Outstanding on April 30, 2021	**17,873,331**

QUAKER CHEMICAL CORPORATION AND CONSOLIDATED SUBSIDIARIES

PART I
FINANCIAL INFORMATION

Item 1. Financial Statements (Unaudited).

Quaker Chemical Corporation
Condensed Consolidated Statements of Operations
(Dollars in thousands, except per share data)

	Unaudited	
	Three Months Ended March 31,	
	2021	2020
Net sales	$ 429,783	$ 378,561
Cost of goods sold (excluding amortization expense - See Note 14)	273,589	244,710
Gross profit	156,194	133,851
Selling, general and administrative expenses	104,310	98,701
Indefinite-lived intangible asset impairment	—	38,000
Restructuring and related charges	1,175	1,716
Combination, integration and other acquisition-related expenses	5,815	7,878
Operating income (loss)	44,894	(12,444)
Other income (expense), net	4,687	(21,175)
Interest expense, net	(5,470)	(8,461)
Income (loss) before taxes and equity in net income of associated companies	44,111	(42,080)
Taxes on income (loss) before equity in net income of associated companies	10,689	(13,070)
Income (loss) before equity in net income of associated companies	33,422	(29,010)
Equity in net income of associated companies	5,210	666
Net income (loss)	38,632	(28,344)
Less: Net income attributable to noncontrolling interest	17	37
Net income (loss) attributable to Quaker Chemical Corporation	$ 38,615	$ (28,381)
Earnings per common share data:		
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – basic	$ 2.16	$ (1.60)
Net income (loss) attributable to Quaker Chemical Corporation common shareholders – diluted	$ 2.15	$ (1.60)
Dividends declared	$ 0.395	$ 0.385

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

Quaker Chemical Corporation
Condensed Consolidated Statements of Comprehensive Income
(Dollars in thousands)

	Unaudited	
	Three Months Ended March 31,	
	2021	2020
Net income (loss)	$ 38,632	$ (28,344)
Other comprehensive (loss) income, net of tax		
Currency translation adjustments	(25,461)	(54,751)
Defined benefit retirement plans	1,292	16,957
Current period change in fair value of derivatives	562	(3,981)
Unrealized loss on available-for-sale securities	(3,025)	(1,711)
Other comprehensive loss	(26,632)	(43,486)
Comprehensive income (loss)	12,000	(71,830)
Less: Comprehensive (income) loss attributable to noncontrolling interest	(15)	95
Comprehensive income (loss) attributable to Quaker Chemical Corporation	$ 11,985	$ (71,735)

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

Quaker Chemical Corporation
Condensed Consolidated Balance Sheets
(Dollars in thousands, except par value and share amounts)

	Unaudited	
	March 31, 2021	December 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	$ 163,455	$ 181,833
Accounts receivable, net	411,523	372,974
Inventories		
Raw materials and supplies	97,631	86,148
Work-in-process and finished goods	110,147	101,616
Prepaid expenses and other current assets	48,285	50,156
Total current assets	831,041	792,727
Property, plant and equipment, at cost	416,514	423,253
Less accumulated depreciation	(220,724)	(219,370)
Property, plant and equipment, net	195,790	203,883
Right of use lease assets	38,027	38,507
Goodwill	627,574	631,212
Other intangible assets, net	1,075,343	1,081,358
Investments in associated companies	96,213	95,785
Deferred tax assets	17,057	16,566
Other non-current assets	31,906	31,796
Total assets	$ 2,912,951	$ 2,891,834
LIABILITIES AND EQUITY		
Current liabilities		
Short-term borrowings and current portion of long-term debt	$ 43,330	$ 38,967
Accounts and other payables	214,015	198,872
Accrued compensation	29,091	43,300
Accrued restructuring	5,970	8,248
Other current liabilities	104,029	93,573
Total current liabilities	396,435	382,960
Long-term debt	859,433	849,068
Long-term lease liabilities	27,050	27,070
Deferred tax liabilities	186,031	192,763
Other non-current liabilities	114,549	119,059
Total liabilities	1,583,498	1,570,920
Commitments and contingencies (Note 19)		
Equity		
Common stock, $1 par value; authorized 30,000,000 shares; issued and outstanding 2021 – 17,875,076 shares; 2020 – 17,850,616 shares	17,875	17,851
Capital in excess of par value	908,748	905,171
Retained earnings	455,493	423,940
Accumulated other comprehensive loss	(53,228)	(26,598)
Total Quaker shareholders' equity	1,328,888	1,320,364
Noncontrolling interest	565	550
Total equity	1,329,453	1,320,914
Total liabilities and equity	$ 2,912,951	$ 2,891,834

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

Quaker Chemical Corporation
Condensed Consolidated Statements of Cash Flows
(Dollars in thousands)

	Unaudited Three Months Ended March 31, 2021	Unaudited Three Months Ended March 31, 2020
Cash flows from operating activities		
Net income (loss)	$ 38,632	$ (28,344)
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:		
Amortization of debt issuance costs	1,187	1,187
Depreciation and amortization	22,145	21,197
Equity in undistributed earnings of associated companies, net of dividends	(5,105)	4,285
Acquisition-related fair value adjustments related to inventory	801	—
Deferred compensation, deferred taxes and other, net	(9,888)	(22,988)
Share-based compensation	3,779	4,682
Gain on disposal of property, plant, equipment and other assets	(5,410)	(2)
Insurance settlement realized	—	(229)
Indefinite-lived intangible asset impairment	—	38,000
Combination and other acquisition-related expenses, net of payments	(2,884)	(519)
Restructuring and related charges	1,175	1,716
Pension and other postretirement benefits	(1,034)	22,453
(Decrease) increase in cash from changes in current assets and current liabilities, net of acquisitions:		
Accounts receivable	(46,270)	2,322
Inventories	(24,994)	(10,162)
Prepaid expenses and other current assets	(8,315)	(3,263)
Change in restructuring liabilities	(3,034)	(4,841)
Accounts payable and accrued liabilities	26,597	(5,275)
Net cash (used in) provided by operating activities	(12,618)	20,219
Cash flows from investing activities		
Investments in property, plant and equipment	(3,934)	(4,892)
Payments related to acquisitions, net of cash acquired	(26,655)	(3,160)
Proceeds from disposition of assets	14,744	—
Insurance settlement interest earned	—	31
Net cash used in investing activities	(15,845)	(8,021)
Cash flows from financing activities		
Payments of long-term debt	(9,551)	(9,371)
Borrowings on revolving credit facilities, net	30,000	205,500
Repayments on other debt, net	(188)	(185)
Dividends paid	(7,052)	(6,828)
Stock options exercised, other	(178)	(696)
Purchase of noncontrolling interest in affiliates	—	(1,047)
Distributions to noncontrolling affiliate shareholders	—	(751)
Net cash provided by financing activities	13,031	186,622
Effect of foreign exchange rate changes on cash	(3,008)	(6,424)
Net (decrease) increase in cash, cash equivalents and restricted cash	(18,440)	192,396
Cash, cash equivalents and restricted cash at the beginning of the period	181,895	143,555
Cash, cash equivalents and restricted cash at the end of the period	$ 163,455	$ 335,951

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

Note 1 – Basis of Presentation and Description of Business

Basis of Presentation

As used in these Notes to Condensed Consolidated Financial Statements, the terms "Quaker", "Quaker Houghton", the "Company", "we", and "our" refer to Quaker Chemical Corporation (doing business as Quaker Houghton), its subsidiaries, and associated companies, unless the context otherwise requires. As used in these Notes to Condensed Consolidated Financial Statements, the term Legacy Quaker refers to the Company prior to the closing of its combination with Houghton International, Inc. ("Houghton") (herein referred to as the "Combination"). The condensed consolidated financial statements included herein are unaudited and have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP") for interim financial reporting and the United States Securities and Exchange Commission ("SEC") regulations. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. In the opinion of management, the financial statements reflect all adjustments which are necessary for a fair statement of the financial position, results of operations and cash flows for the interim periods. The results for the three months ended March 31, 2021 are not necessarily indicative of the results to be expected for the full year. These financial statements should be read in conjunction with the Company's Annual Report filed on Form 10-K for the year ended December 31, 2020 (the "2020 Form 10-K").

Description of Business

The Company was organized in 1918, incorporated as a Pennsylvania business corporation in 1930, and in August 2019 completed the Combination with Houghton to form Quaker Houghton. Quaker Houghton is a global leader in industrial process fluids. With a presence around the world, including operations in over 25 countries, the Company's customers include thousands of the world's most advanced and specialized steel, aluminum, automotive, aerospace, offshore, can, mining, and metalworking companies. Quaker Houghton develops, produces, and markets a broad range of formulated chemical specialty products and offers chemical management services (which the Company refers to as "Fluidcare") for various heavy industrial and manufacturing applications throughout its four segments: Americas; Europe, Middle East and Africa ("EMEA"); Asia/Pacific; and Global Specialty Businesses.

Hyper-inflationary economies

Based on various indices or index compilations being used to monitor inflation in Argentina as well as economic instability, effective July 1, 2018, Argentina's economy was considered hyper-inflationary under U.S. GAAP. As a result, the Company began applying hyper-inflationary accounting with respect to the Company's wholly owned Argentine subsidiary beginning July 1, 2018. In addition, Houghton has an Argentina subsidiary to which hyper-inflationary accounting also is applied. As of, and for the three months ended March 31, 2021, the Company's Argentine subsidiaries represented less than 1% of the Company's consolidated total assets and net sales, respectively. During the three months ended March 31, 2021 and 2020, the Company recorded $0.2 million and $0.1 million, respectively, of remeasurement losses associated with the applicable currency conversions related to Argentina. These losses were recorded within foreign exchange (losses) gains, net, which is a component of other income (expense), net, in the Company's Condensed Consolidated Statements of Operations.

COVID-19

Management continues to monitor the impact that the COVID-19 pandemic is having on the Company, the overall specialty chemical industry, and the economies and markets in which the Company operates. The full extent of the COVID-19 pandemic related business and travel restrictions and changes to business and consumer behavior intended to reduce its spread are uncertain as of the date of this Quarterly Report on Form 10-Q for the period ended March 31, 2021 (the "Report") as COVID-19 and the responses of governmental authorities continue to evolve globally.

Further, management continues to evaluate how COVID-19-related circumstances, such as remote work arrangements, affect financial reporting processes, internal control over financial reporting, and disclosure controls and procedures. While the circumstances have presented and are expected to continue to present challenges, at this time, Management does not believe that COVID-19 has had a material impact on financial reporting processes, internal control over financial reporting, and disclosure controls and procedures.

The Company cannot reasonably estimate the magnitude of the effects these conditions will have on the Company's operations in the future as they are subject to significant uncertainties relating to the ultimate geographic spread of the virus, the incidence and severity of the symptoms, the duration or resurgence of the outbreak, the global availability and acceptance of vaccines as well as their efficacy, the length of the travel restrictions and business closures imposed by governments of impacted countries, and the economic response by governments of impacted countries.

To the extent that the Company's customers and suppliers continue to be significantly and adversely impacted by COVID-19, this could reduce the availability, or result in delays, of materials or supplies to or from the Company, which in turn could significantly interrupt the Company's business operations. Such impacts could grow and become more significant to the Company's operations and the Company's liquidity or financial position. Therefore, given the speed and frequency of continuously evolving developments with respect to this pandemic, the Company cannot reasonably estimate the magnitude or the full extent to which COVID-19 may impact the Company's results of operations, liquidity or financial position.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 2 – Business Acquisitions

2021 Acquisitions

In February 2021, the Company acquired a tin-plating solutions business for the steel end market for approximately $25 million. The Company allocated $19.6 million of the purchase price to intangible assets, comprised of $18.3 million of customer relationships, to be amortized over 19 years; $0.9 million of existing product technology to be amortized over 14 years; and $0.4 million of a licensed trademark to be amortized over 3 years. In addition, the Company recorded $5.0 million of goodwill related to expected value not allocated to other acquired assets, all of which is expected to be tax deductible. As of March 31, 2021, the allocation of the purchase price has not been finalized and the one-year measurement period has not ended. Further adjustments may be necessary as a result of the Company's on-going assessment of additional information related to the fair value of assets acquired and liabilities assumed.

Additionally, in February 2021, the Company acquired a 38% ownership interest in Grindaix-GmbH ("Grindaix"), a privately held, German-based, high-tech provider of coolant control and delivery systems for approximately 1.4 million EUR or approximately $1.7 million. Grindaix's solutions apply to a wide range of machining processes, including grinding applications in the metalworking sector. The Company recorded the investment in Grindaix as an equity method investment within the Condensed Consolidated Financial Statements.

The results of operations of the acquired businesses subsequent to the respective acquisition dates are included in the Condensed Consolidated Statements of Operations as of March 31, 2021. Transaction expenses associated with these acquisitions are included in Combination, integration and other acquisition-related expenses in the Company's Condensed Consolidated Statements of Operations. Certain pro forma and other information is not presented, as the operations of the acquired businesses are not considered material to the overall operations of the Company for the periods presented.

Previous Acquisitions

In December 2020, the Company completed its acquisition of Coral Chemical Company ("Coral"), a privately held, U.S.-based provider of metal finishing fluid solutions. The acquisition provides technical expertise and product solutions for pre-treatment, metalworking and wastewater treatment applications to the beverage cans and general industrial end markets. The original purchase price was approximately $54.1 million, subject to routine and customary post-closing adjustments related to working capital and net indebtedness levels. The Company anticipates finalizing its post-closing adjustments for the Coral acquisition in the second quarter of 2021 and currently estimates it will receive approximately $0.4 million to settle such adjustments.

The following table presents the preliminary estimated fair values of Coral net assets acquired:

	December 22, 2020 (1)	Measurement Period Adjustments	December 22, 2020 (as adjusted)
Cash and cash equivalents	$ 958	$ —	$ 958
Accounts receivable	8,473	—	8,473
Inventories	4,527	—	4,527
Prepaid expenses and other assets	181	—	181
Property, plant and equipment	10,467	652	11,119
Intangible assets	30,300	(500)	29,800
Goodwill	2,814	53	2,867
Total assets purchased	57,720	205	57,925
Long-term debt including current portions and finance leases	183	556	739
Accounts payable, accrued expenses and other accrued liabilities	3,482	—	3,482
Total liabilities assumed	3,665	556	4,221
Total consideration paid for Coral	54,055	(351)	53,704
Less: estimated purchase price settlement	—	(351)	(351)
Less: cash acquired	958	—	958
Net cash paid for Coral	$ 53,097	$ —	$ 53,097

(1) As previously disclosed in the Company's 2020 Form 10-K.

Measurement period adjustments recorded during the first quarter of 2021 include certain adjustments related to refining original estimates for assets and liabilities for certain acquired finance leases, as well the adjustment to reflect the expected settlement of post-closing working capital and net indebtedness true ups to the original purchase price. As of March 31, 2021, the allocation of the purchase price for Coral has not been finalized and the one-year measurement period has not ended. Further adjustments may be necessary as a result of the Company's on-going assessment of additional information related to the fair value of assets acquired and liabilities assumed.

In May 2020, the Company acquired Tel Nordic ApS ("TEL"), a company that specializes in lubricants and engineering primarily in high pressure aluminum die casting for its Europe, Middle East and Africa ("EMEA") reportable segment. Consideration paid was in the form of a convertible promissory note in the amount of 20.0 million DKK, or approximately $2.9 million, which was subsequently converted into shares of the Company's common stock. An adjustment to the purchase price of approximately 0.4 million DKK, or less than $0.1 million, was made as a result of finalizing a post-closing settlement in the second quarter of 2020. The Company allocated approximately $2.4 million of the purchase price to intangible assets to be amortized over 17 years. In addition, the Company recorded approximately $0.5 million of goodwill, related to expected value not allocated to other acquired assets, none of which will be tax deductible. As of March 31, 2021, the allocation of the purchase price of TEL has not been finalized and the one- measurement period has not ended. Further adjustments may be necessary as a result of the Company's on-going assessment of additional information related to the fair value of assets acquired and liabilities assumed.

In March 2020, the Company acquired the remaining 49% ownership interest in one of its South African affiliates, Quaker Chemical South Africa Limited ("QSA") for 16.7 million ZAR, or approximately $1.0 million, from its joint venture partner PQ Holdings South Africa. QSA is a part of the Company's Europe, Middle East and Africa ("EMEA") reportable segment. As this acquisition was a change in an existing controlling ownership, the Company recorded $0.7 million of excess purchase price over the carrying value of the non-controlling interest in Capital in excess of par value.

In October 2019, the Company completed its acquisition of the operating divisions of Norman Hay plc ("Norman Hay"), a private U.K. company that provides specialty chemicals, operating equipment, and services to industrial end markets. The acquisition adds new technologies in automotive, original equipment manufacturer, and aerospace, as well as engineering expertise which is expected to strengthen the Company's existing equipment solutions platform. The original purchase price was 80.0 million GBP, on a cash-free and debt-free basis, subject to routine and customary post-closing adjustments related to working capital and net indebtedness levels. The Company finalized its post-closing adjustments for the Norman Hay acquisition and paid approximately 2.5 million GBP during the first quarter of 2020 to settle such adjustments.

Note 3 – Recently Issued Accounting Standards

Recently Issued Accounting Standards Adopted

The Financial Accounting Standards Board ("FASB") issued Account Standards Update ("ASU") ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* in December 2019 to simplify the accounting for income taxes. The guidance within this accounting standard update removes certain exceptions, including the exception to the incremental approach for certain intra-period tax allocations, to the requirement to recognize or not recognize certain deferred tax liabilities for equity method investments and foreign subsidiaries, and to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. Further, the guidance simplifies the accounting related to franchise taxes, the step up in tax basis for goodwill, current and deferred tax expense, and codification improvements for income taxes related to employee stock ownership plans. The guidance is effective for annual and interim periods beginning after December 15, 2020. The Company adopted this standard on a prospective basis, effective January 1, 2021. There was no cumulative effect of adoption recorded within retained earnings on January 1, 2021.

The FASB issued ASU 2020-04, *Reference Rate Reform (To pic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* in March 2020. The FASB subsequently issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope* in January 2021 which clarified the guidance but did not materially change the guidance or its applicability to the Company. The amendments provide temporary optional expedients and exceptions for applying U.S. GAAP to contract modifications, hedging relationships and other transactions to ease the potential accounting and financial reporting burden associated with transitioning away from reference rates that are expected to be discontinued, including the London Interbank Offered Rate ("LIBOR"). ASU 2020-04 is effective for the Company as of March 12, 2020 and generally can be applied through December 31, 2022. As of March 31, 2021, the expedients provided in ASU 2020-04 do not presently impact the Company; however, the Company will continue to monitor for potential impacts on its consolidated financial statements.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 4 – Business Segments

The Company's operating segments, which are consistent with its reportable segments, reflect the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the chief operating decision maker assesses the Company's performance. The Company has four reportable segments: (i) Americas; (ii) EMEA; (iii) Asia/Pacific; and (iv) Global Specialty Businesses. The three geographic segments are composed of the net sales and operations in each respective region, excluding net sales and operations managed globally by the Global Specialty Businesses segment, which includes the Company's container, metal finishing, mining, offshore, specialty coatings, specialty grease and Norman Hay businesses.

Segment operating earnings for each of the Company's reportable segments are comprised of the segment's net sales less directly related cost of goods sold ("COGS") and selling, general and administrative expenses ("SG&A"). Operating expenses not directly attributable to the net sales of each respective segment, such as certain corporate and administrative costs, Combination, integration and other acquisition-related expenses, and Restructuring and related charges, are not included in segment operating earnings. Other items not specifically identified with the Company's reportable segments include interest expense, net and other income (expense), net.

The following table presents information about the performance of the Company's reportable operating segments for the three months ended March 31, 2021 and 2020:

	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
Net sales		
Americas	$ 134,871	$ 129,896
EMEA	119,814	104,839
Asia/Pacific	96,706	73,552
Global Specialty Businesses	78,392	70,274
Total net sales	$ 429,783	$ 378,561
Segment operating earnings		
Americas	$ 32,234	$ 29,188
EMEA	25,244	18,359
Asia/Pacific	27,478	19,541
Global Specialty Businesses	24,169	20,560
Total segment operating earnings	109,125	87,648
Combination, integration and other acquisition-related expenses	(5,815)	(7,878)
Restructuring and related charges	(1,175)	(1,716)
Fair value step up of acquired inventory sold	(801)	—
Indefinite-lived intangible asset impairment	—	(38,000)
Non-operating and administrative expenses	(40,992)	(38,451)
Depreciation of corporate assets and amortization	(15,448)	(14,047)
Operating income (loss)	44,894	(12,444)
Other income (expense), net	4,687	(21,175)
Interest expense, net	(5,470)	(8,461)
Income (loss) before taxes and equity in net income of associated companies	$ 44,111	$ (42,080)

Inter-segment revenues for the three months ended March 31, 2021 and 2020 were $3.3 million and $2.9 million for Americas, $8.8 million and $5.5 million for EMEA, $0.1 million and $0.1 million for Asia/Pacific and $2.0 million and $1.3 million for Global Specialty Businesses, respectively. However, all inter-segment transactions have been eliminated from each reportable operating segment's net sales and earnings for all periods presented in the above tables.

Note 5 – Net Sales and Revenue Recognition

Business Description

The Company develops, produces, and markets a broad range of formulated chemical specialty products and offers chemical management services ("Fluidcare") for various heavy industrial and manufacturing applications throughout its four segments. A significant portion of the Company's revenues are realized from the sale of process fluids and services made directly to manufacturers through its own employees and its Fluidcare programs, with the balance being handled through distributors and agents.

As part of the Company's Fluidcare business, certain third-party product sales to customers are managed by the Company. Where the Company acts as a principal, revenues are recognized on a gross reporting basis at the selling price negotiated with its customers. Where the Company acts as an agent, revenue is recognized on a net reporting basis at the amount of the administrative fee earned by the Company for ordering the goods. The Company transferred third-party products under arrangements recognized on a net reporting basis of $17.8 million and $12.5 million for the three months ended March 31, 2021 and 2020, respectively.

As previously disclosed in the Company's 2020 Form 10-K, during 2020, the Company's five largest customers (each composed of multiple subsidiaries or divisions with semiautonomous purchasing authority) accounted for approximately 10% of consolidated net sales, with its largest customer accounting for approximately 3% of consolidated net sales.

Revenue Recognition Model

The Company applies the five-step model in the FASB's guidance, which requires the Company to: (i) identify the contract with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when, or as, the Company satisfies a performance obligation. Refer to the Company's 2020 Form 10-K for additional information on the Company's revenue recognition policies, including its practical expedients and accounting policy elections.

Allowance for Doubtful Accounts

As previously disclosed in the Company's 2020 Form 10-K, during 2020, the Company adopted, as required, an accounting standard update related to the accounting and disclosure of credit losses effective January 1, 2020. The Company recognizes an allowance for credit losses, which represents the portion of its trade accounts receivable that the Company does not expect to collect over the contractual life, considering past events and reasonable and supportable forecasts of future economic conditions. The Company's allowance for credit losses on its trade accounts receivables is based on specific collectability facts and circumstances for each outstanding receivable and customer, the aging of outstanding receivables, and the associated collection risk the Company estimates for certain past due aging categories, and also, the general risk to all outstanding accounts receivable based on historical amounts determined to be uncollectible. The Company does not have any off-balance-sheet credit exposure related to its customers.

Contract Assets and Liabilities

The Company recognizes a contract asset or receivable on its Condensed Consolidated Balance Sheet when the Company performs a service or transfers a good in advance of receiving consideration. A receivable is the Company's right to consideration that is unconditional and only the passage of time is required before payment of that consideration is due. A contract asset is the Company's right to consideration in exchange for goods or services that the Company has transferred to a customer. The Company had no material contract assets recorded on its Condensed Consolidated Balance Sheets as of March 31, 2021 or December 31, 2020.

A contract liability is recognized when the Company receives consideration, or if it has the unconditional right to receive consideration, in advance of performance. A contract liability is the Company's obligation to transfer goods or services to a customer for which the Company has received consideration, or a specified amount of consideration is due, from the customer. The Company's contract liabilities primarily represent deferred revenue recorded for customer payments received by the Company prior to the Company satisfying the associated performance obligation. Deferred revenues are presented within other current liabilities in the Company's Condensed Consolidated Balance Sheets. The Company had approximately $6.3 million and $4.0 million of deferred revenue as of March 31, 2021 and December 31, 2020, respectively. For three months ended March 31, 2021, the Company satisfied all of the associated performance obligations and recognized into revenue the advance payments received and recorded as of December 31, 2020.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Disaggregated Revenue

The following tables disaggregate the Company's net sales by segment, geographic region, customer industry, and timing of revenue recognized for the three months ended March 31, 2021 and 2020.

	Three Months Ended March 31, 2021			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 46,793	$ 34,274	$ 49,743	$ 130,810
Metalworking and other	88,078	85,540	46,963	220,581
	134,871	119,814	96,706	351,391
Global Specialty Businesses	45,256	20,272	12,864	78,392
	$ 180,127	$ 140,086	$ 109,570	$ 429,783
Timing of Revenue Recognized				
Product sales at a point in time	$ 171,594	$ 131,162	$ 106,399	$ 409,155
Services transferred over time	8,533	8,924	3,171	20,628
	$ 180,127	$ 140,086	$ 109,570	$ 429,783

	Three Months Ended March 31, 2020			
	Americas	**EMEA**	**Asia/Pacific**	**Consolidated Total**
Customer Industries				
Metals	$ 46,673	$ 29,888	$ 41,589	$ 118,150
Metalworking and other	83,223	74,951	31,963	190,137
	129,896	104,839	73,552	308,287
Global Specialty Businesses	44,231	16,605	9,438	70,274
	$ 174,127	$ 121,444	$ 82,990	$ 378,561
Timing of Revenue Recognized				
Product sales at a point in time	$ 168,802	$ 118,423	$ 81,156	$ 368,381
Services transferred over time	5,325	3,021	1,834	10,180
	$ 174,127	$ 121,444	$ 82,990	$ 378,561

Note 6 - Leases

The Company determines if an arrangement is a lease at its inception. This determination generally depends on whether the arrangement conveys the right to control the use of an identified fixed asset explicitly or implicitly for a period of time in exchange for consideration. Control of an underlying asset is conveyed if the Company obtains the rights to direct the use of, and obtains substantially all of the economic benefits from the use of, the underlying asset. Lease expense for variable leases and short-term leases is recognized when the obligation is incurred.

The Company has operating leases for certain facilities, vehicles and machinery and equipment with remaining lease terms up to 10 years. In addition, the Company has certain land use leases with remaining lease terms up to 94 years. The lease term for all of the Company's leases includes the non-cancellable period of the lease plus any additional periods covered by an option to extend the lease that the Company is reasonably certain it will exercise. Operating leases are included in right of use lease assets, other current liabilities and long-term lease liabilities on the Condensed Consolidated Balance Sheet. Right of use lease assets and liabilities are recognized at each lease's commencement date based on the present value of its lease payments over its respective lease term. The Company uses the stated borrowing rate for a lease when readily determinable. When a stated borrowing rate is not available in a lease agreement, the Company uses its incremental borrowing rate based on information available at the lease's commencement date to determine the present value of its lease payments. In determining the incremental borrowing rate used to present value each of its leases, the Company considers certain information including fully secured borrowing rates readily available to the Company and its subsidiaries. The Company has immaterial finance leases, which are included in property, plant and equipment, current portion of long-term debt and long-term debt on the Condensed Consolidated Balance Sheet.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Operating lease expense is recognized on a straight-line basis over the lease term. Operating lease expense for the three months ended March 31, 2021 and 2020 was $3.6 million and $3.4 million, respectively. Short-term lease expense was $0.3 million and $0.5 million for the three months ended March 31, 2021 and 2020, respectively. The Company has no material variable lease costs or sublease income for the three months ended March 31, 2021 and 2020. Cash paid for operating leases was $3.6 million and $3.4 million during the three months ended March 31, 2021 and 2020, respectively. The Company recorded new right of use lease assets and associated lease liabilities of approximately $3.1 million during the three months ended March 31, 2021.

Supplemental balance sheet information related to the Company's leases is as follows:

	March 31, 2021	December 31, 2020
Right of use lease assets	$ 38,027	$ 38,507
Other current liabilities	10,419	10,901
Long-term lease liabilities	27,050	27,070
Total operating lease liabilities	$ 37,469	$ 37,971
Weighted average remaining lease term (years)	5.9	6.0
Weighted average discount rate	4.26%	4.20%

Maturities of operating lease liabilities as of March 31, 2021 were as follows:

	March 31, 2021
For the remainder of 2021	$ 9,269
For the year ended December 31, 2022	9,042
For the year ended December 31, 2023	6,932
For the year ended December 31, 2024	5,194
For the year ended December 31, 2025	4,211
For the year ended December 31, 2026 and beyond	8,116
Total lease payments	42,764
Less: imputed interest	(5,295)
Present value of lease liabilities	$ 37,469

Note 7 – Restructuring and Related Activities

The Company's management approved a global restructuring plan (the "QH Program") as part of its plan to realize certain cost synergies associated with the Combination in the third quarter of 2019. The QH Program includes restructuring and associated severance costs to reduce total headcount by approximately 400 people globally, as well as plans for the closure of certain manufacturing and non-manufacturing facilities. The exact timing and total costs associated with the QH Program will depend on a number of factors and is subject to change; however, the Company currently expects reduction in headcount and site closures to continue to occur throughout 2021 under the QH Program and estimates that anticipated costs synergies realized from the QH Program will approximate one-times the restructuring costs incurred. Employee separation benefits will vary depending on local regulations within certain foreign countries and will include severance and other benefits.

All costs incurred to date relate to severance costs to reduce headcount as well as costs to close certain facilities and are recorded in Restructuring and related charges in the Company's Condensed Statements of Operations. As described in Note 4 of Notes to Condensed Consolidated Financial Statements, restructuring and related charges are not included in the Company's calculation of reportable segments' measure of operating earnings and therefore these costs are not reviewed by or recorded to reportable segments.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Activity in the Company's accrual for restructuring under the QH Program for the three months ended March 31, 2021 is as follows:

	QH Program
Accrued restructuring as of December 31, 2020	$ 8,248
Restructuring and related charges	1,175
Cash payments	(3,034)
Currency translation adjustments	(419)
Accrued restructuring as of March 31, 2021	$ 5,970

Note 8 – Share-Based Compensation

The Company recognized the following share-based compensation expense in its Condensed Consolidated Statements of Operations for the three months ended March 31, 2021 and 2020:

	Three Months Ended March 31,	
	2021	2020
Stock options	$ 308	$ 432
Non-vested stock awards and restricted stock units	1,396	1,264
Non-elective and elective 401(k) matching contribution in stock	1,553	—
Director stock ownership plan	203	40
Performance stock units	319	—
Annual incentive plan	—	2,946
Total share-based compensation expense	$ 3,779	$ 4,682

Share-based compensation expense is recorded in SG&A, except for $0.3 million and $0.5 million during the three months ended March 31, 2021 and 2020, respectively, recorded within Combination, integration and other acquisition-related expenses. The change in total share-based compensation expense for the three months ended March 31, 2021 includes performance stock units and non-elective 401(k) matching contributions in stock but excludes annual incentive plan costs as a component of share-based compensation beginning in 2020, each described further below.

Stock Options

During the first quarter of 2021, the Company granted stock options under its long-term incentive plan ("LTIP") that are subject only to time vesting over a three-year period. For the purposes of determining the fair value of stock option awards, the Company used a Black-Scholes option pricing model and the assumptions set forth in the table below:

Number of options granted	23,733
Dividend yield	0.85 %
Expected volatility	37.33 %
Risk-free interest rate	0.60 %
Expected term (years)	4.0

The fair value of these options is amortized on a straight-line basis over the vesting period. As of March 31, 2021, unrecognized compensation expense related to all stock options granted was $2.8 million, to be recognized over a weighted average remaining period of 2.5 years.

Restricted Stock Awards and Restricted Stock Units

During the first quarter of 2021, the Company granted 12,610 nonvested restricted shares and 2,791 nonvested restricted stock units under its LTIP, subject to time-based vesting, generally over a three-year period. The fair value of these grants is based on the trading price of the Company's common stock on the date of grant. The Company adjusts the grant date fair value of these awards for expected forfeitures based on historical experience. As of March 31, 2021, unrecognized compensation expense related to the nonvested restricted shares was $6.3 million, to be recognized over a weighted average remaining period of 2.1 years, and unrecognized compensation expense related to nonvested restricted stock units was $1.3 million, to be recognized over a weighted average remaining period of 2.3 years.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Performance Stock Units

During the first quarter of 2021, the Company granted performance-dependent stock awards ("PSUs") as a component of its LTIP, which will be settled in a certain number of shares subject to market-based and time-based vesting conditions. The number of fully vested shares that may ultimately be issued as settlement for each award may range from 0% up to 200% of the target award, subject to the achievement of the Company's total shareholder return ("TSR") relative to the performance of the Company's peer group, the S&P Midcap 400 Materials group. The service period required for the PSUs is three years and the TSR measurement period for the PSUs is from January 1 of the year of grant through December 31 of the year prior to issuance.

Compensation expense for PSUs is measured based on their grant date fair value and is recognized on a straight-line basis over the three-year vesting period. The grant-date fair value of the PSUs granted during the first quarter of 2021 was estimated using a Monte Carlo simulation on the grant date and using the following assumptions: (i) a risk-free rate of 0.29%; (ii) an expected term of 3.0 years; and (iii) a three-year daily historical volatility for each of the companies in the peer group, including Quaker Houghton.

As of March 31, 2021, the Company estimates that it will issue approximately 28,000 fully vested shares as of the applicable settlement dates of all outstanding PSU awards, based on the conditions of the PSUs and performance to date for each award. As of March 31, 2021, there was approximately $4.8 million of total unrecognized compensation cost related to PSUs, which the Company expects to recognize over a weighted-average period of 2.5 years.

Annual Incentive Plan

The Company maintains an Annual Incentive Plan ("AIP"), which may be settled in cash or a certain number of shares subject to performance-based and time-based vesting conditions. As of March 31, 2020, it was the Company's intention to settle the 2020 AIP in shares, and therefore, expense associated with the AIP in 2020 was recorded as a component of share-based compensation expense. In the fourth quarter of 2020, the Company determined that it would settle the 2020 AIP in cash. Therefore, the share-based compensation associated with the AIP during the year ended December 31, 2020 was reclassified from a component of share-based compensation expense to incentive compensation. This determination and conclusion had no impact on the classification of AIP expense within the Company's Condensed Consolidated Statement of Operations for the periods as both are a component of SG&A. As of March 31, 2021, it is the Company's intention to settle the 2021 AIP in cash.

Defined Contribution Plan

The Company has a 401(k) plan with an employer match covering a majority of its U.S. employees. The Company matches 50% of the first 6% of compensation that is contributed to the plan, with a maximum matching contribution of 3% of compensation. Additionally, the plan provides for non-elective nondiscretionary contributions on behalf of participants who have completed one year of service equal to 3% of the eligible participants' compensation. Beginning in April 2020 and continuing until April 2021, the Company matched both non-elective and elective 401(k) contributions in fully vested shares of the Company's common stock rather than cash. Total Company contributions were $1.5 million for the three months ended March 31, 2021. There were no similar matching contributions in stock for the three months ended March 31, 2020.

Note 9 – Pension and Other Postretirement Benefits

The components of net periodic benefit cost for the three months ended March 31, 2021 and 2020 are as follows:

	Three Months Ended March 31,			
	Pension Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Service cost	$ 316	$ 1,174	$ 1	$ 2
Interest cost	1,090	1,769	11	26
Expected return on plan assets	(2,082)	(1,959)	—	—
Settlement loss	—	22,667	—	—
Actuarial loss amortization	855	1,047	—	15
Prior service (credit) cost amortization	2	(40)	—	—
Total net periodic benefit cost	$ 181	$ 24,658	$ 12	$ 43

As disclosed in the Company's 2020 Form 10-K, in the fourth quarter of 2018, the Company began the process of terminating its legacy Quaker non-contributory U.S. pension plan ("Legacy Quaker U.S. Pension Plan"). During the third quarter of 2019, the Company received a favorable termination determination letter from the Internal Revenue Service ("I.R.S.") and completed the Legacy Quaker U.S. Pension Plan termination during the first quarter of 2020. In order to terminate the Legacy Quaker U.S. Pension Plan in accordance with I.R.S. and Pension Benefit Guaranty Corporation requirements, the Company was required to fully fund the

(Dollars in thousands, except per share amounts, unless otherwise stated)

Legacy Quaker U.S. Pension Plan on a termination basis and the amount necessary to do so was approximately $1.8 million, subject to final true up adjustments, which were completed in the third quarter of 2020. In addition, the Company recorded a non-cash pension settlement charge at plan termination of approximately $22.7 million. This settlement charge included the immediate recognition into expense of the related unrecognized losses within accumulated other comprehensive (loss) income ("AOCI") on the balance sheet as of the plan termination date.

Employer Contributions

The Company previously disclosed in its 2020 Form 10-K that it expected to make minimum cash contributions of $10.0 million to its U.S. and foreign pension plans and approximately $0.3 million to its other postretirement benefit plans in 2021. As of March 31, 2021, $1.0 million and $0.1 million of contributions have been made to the Company's U.S. and foreign pension plans and its other postretirement benefit plans, respectively.

Note 10 – Other Income (Expense), Net

The components of other income (expense), net for the three months ended March 31, 2021 and 2020 are as follows:

	Three Months Ended March 31,	
	2021	**2020**
Income from third party license fees	$ 339	$ 304
Foreign exchange (losses) gains, net	(1,478)	821
Gain on disposals of property, plant, equipment and other assets, net	5,410	2
Non-income tax refunds and other related credits	97	1,299
Pension and postretirement benefit costs, non-service components	124	(23,525)
Other non-operating income (expense), net	195	(76)
Total other income (expense), net	$ 4,687	$ (21,175)

The Gain on disposals of property, plant, equipment and other assets, net, during the three months ended March 31, 2021, includes the gain on the sale of certain held-for-sale real property assets related to the Combination. Pension and postretirement benefit costs, non-service components during the three months ended March 31, 2020 includes $22.7 million related to the Legacy Quaker U.S. Pension Plan non-cash settlement charge described in Note 9 of Notes to Condensed Consolidated Financial Statements.

Note 11 – Income Taxes and Uncertain Income Tax Positions

The Company's effective tax rate for the three months ended March 31, 2021 was an expense of 24.2% compared to a benefit of 31.1% for the three months ended March 31, 2020. The Company's effective tax rate for the three months ended March 31, 2021 was largely impacted by the sale of certain held-for-sale real property assets related to the Combination. Comparatively, the prior year first quarter effective tax rate was impacted by the tax effect of certain one-time pre-tax losses as well as certain tax charges and benefits in the prior year period including those related to changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, and the tax impacts of the Company's termination of its Legacy Quaker U.S. Pension Plan and the Houghton indefinite-lived trademarks and tradename intangible asset impairment.

As of December 31, 2020, the Company had a deferred tax liability of $5.9 million, which primarily represents the Company's estimate of non-U.S. taxes it will incur to repatriate certain foreign earnings to the U.S. The balance as of March 31, 2021 was $6.5 million.

As of March 31, 2021, the Company's cumulative liability for gross unrecognized tax benefits was $23.5 million, an increase of $1.3 million from the cumulative liability accrued as of December 31, 2020.

The Company continues to recognize interest and penalties associated with uncertain tax positions as a component of taxes on income (loss) before equity in net income of associated companies in its Condensed Consolidated Statements of Operations. The Company recognized an expense of less than $0.1 million for interest and a benefit of less than $0.1 million for penalties in its Condensed Consolidated Statement of Operations for the three months ended March 31, 2021, and recognized an expense of less than $0.1 million for interest and a benefit of less than $0.1 million for penalties in its Condensed Consolidated Statement of Operations for the three months ended March 31, 2020. As of March 31, 2021, the Company had accrued $3.0 million for cumulative interest and $3.6 million for cumulative penalties in its Condensed Consolidated Balance Sheets, compared to $3.0 million for cumulative interest and $3.9 million for cumulative penalties accrued at December 31, 2020.

(Dollars in thousands, except per share amounts, unless otherwise stated)

During the three months ended March 31, 2021 and 2020, the Company recognized decreases of $0.3 million and $0.8 million, respectively, in its cumulative liability for gross unrecognized tax benefits due to the expiration of the applicable statutes of limitations for certain tax years.

The Company estimates that during the year ending December 31, 2021 it will reduce its cumulative liability for gross unrecognized tax benefits by approximately $1.5 million due to the expiration of the statute of limitations with regard to certain tax positions. This estimated reduction in the cumulative liability for unrecognized tax benefits does not consider any increase in liability for unrecognized tax benefits with regard to existing tax positions or any increase in cumulative liability for unrecognized tax benefits with regard to new tax positions for the year ending December 31, 2021.

The Company and its subsidiaries are subject to U.S. Federal income tax, as well as the income tax of various state and foreign tax jurisdictions. Tax years that remain subject to examination by major tax jurisdictions include Italy from 2006, Brazil from 2011, the Netherlands and China from 2015, Mexico, Spain, Germany and the United Kingdom from 2016, Canada and the U.S. from 2017, India from fiscal year beginning April 1, 2018 and ending March 31, 2019, and various U.S. state tax jurisdictions from 2011.

As previously reported, the Italian tax authorities have assessed additional tax due from the Company's subsidiary, Quaker Italia S.r.l., relating to the tax years 2007 through 2015. The Company has filed for competent authority relief from these assessments under the Mutual Agreement Procedures ("MAP") of the Organization for Economic Co-Operation and Development for all years except 2007. In 2020, the respective tax authorities in Italy, Spain and the Netherlands reached agreement with respect to the MAP proceedings which the Company has accepted. As of March 31, 2021, the Company has received $1.6 million in refunds from the Netherlands and Spain and expects to pay $2.4 million due to Italy in the second quarter of 2021. As of March 31, 2021, the Company believes it has adequate reserves for the remaining uncertain tax positions related to 2007.

Houghton Italia, S.r.l is also involved in a corporate income tax audit with the Italian tax authorities covering tax years 2014 through 2018. As of March 31, 2021, the Company has a $5.5 million reserve for uncertain tax positions relating to matters related to this audit. Since the reserve relates to the tax periods prior to August 1, 2019, the tax liability was established through purchase accounting related to the Combination. The Company has also submitted an indemnification claim against funds held in escrow by Houghton's former owners and as a result, a corresponding $5.5 million indemnification receivable has also been established through purchase accounting.

Houghton Deutschland GmbH is also under audit by the German tax authorities for the tax years 2015-2017. Based on preliminary audit findings, primarily related to transfer pricing, the Company has recorded reserves for $0.9 million as of March 31, 2021. Of this amount, $0.8 million relates to tax periods prior to the Combination and therefore the Company has submitted an indemnification claim with Houghton's former owners for any tax liabilities arising pre-Combination. As a result, a corresponding $0.8 million indemnification receivable has also been established to offset the $0.8 million tax liability.

Note 12 – Earnings Per Share

The following table summarizes earnings per share calculations for the three months ended March 31, 2021 and 2020:

	Three Months Ended March 31, 2021	Three Months Ended March 31, 2020
Basic earnings (loss) per common share		
Net income (loss) attributable to Quaker Chemical Corporation	$ 38,615	$ (28,381)
Less: (income) loss allocated to participating securities	(154)	101
Net income (loss) available to common shareholders	$ 38,461	$ (28,280)
Basic weighted average common shares outstanding	17,785,370	17,672,525
Basic earnings (loss) per common share	$ 2.16	$ (1.60)
Diluted earnings (loss) per common share		
Net income (loss) attributable to Quaker Chemical Corporation	$ 38,615	$ (28,381)
Less: (income) loss allocated to participating securities	(154)	101
Net income (loss) available to common shareholders	$ 38,461	$ (28,280)
Basic weighted average common shares outstanding	17,785,370	17,672,525
Effect of dilutive securities	70,607	—
Diluted weighted average common shares outstanding	17,855,977	17,672,525
Diluted earnings (loss) per common share	$ 2.15	$ (1.60)

(Dollars in thousands, except per share amounts, unless otherwise stated)

Certain stock options and restricted stock units are not included in the diluted earnings (loss) per share calculation when the effect would have been anti-dilutive. The calculated amount of anti-diluted shares not included was 2,083 for the three months ended March 31, 2021. All of the Company's potentially dilutive shares for the three months ended March 31, 2020 are anti-dilutive and not included in the dilutive loss per share calculations because of the Company's net loss during the period.

Note 13 – Restricted Cash

Prior to December 2020, the Company had restricted cash recorded in other assets related to proceeds from an inactive subsidiary of the Company which previously executed separate settlement and release agreements with two of its insurance carriers for an original total value of $35.0 million. The proceeds of both settlements were restricted and could only be used to pay claims and costs of defense associated with the subsidiary's asbestos litigation. The proceeds of the settlement and release agreements were deposited into interest bearing accounts that earned less than $0.1 million offset by $0.2 million of net payments during the three months ended March 31, 2020. Due to the restricted nature of the proceeds, a corresponding deferred credit was established in other non-current liabilities for an equal and offsetting amount that continued until the restrictions lapsed. As disclosed in the Company's 2020 Form 10-K, during December 2020, the restrictions ended on these previously received insurance settlements and the Company transferred the cash into an operating account.

The following table provides a reconciliation of cash, cash equivalents and restricted cash as of March 31, 2021 and 2020, as well as December 31, 2020 and 2019:

	March 31,		December 31,	
	2021	2020	2020	2019
Cash and cash equivalents	$ 163,455	$ 316,437	$ 181,833	$ 123,524
Restricted cash included in other current assets	—	34	62	353
Restricted cash included in other assets	—	19,480	—	19,678
Cash, cash equivalents and restricted cash	$ 163,455	$ 335,951	$ 181,895	$ 143,555

Note 14 – Goodwill and Other Intangible Assets

Changes in the carrying amount of goodwill for the three months ended March 31, 2020 were as follows:

	Americas	EMEA	Asia/Pacific	Global Specialty Businesses	Total
Balance as of December 31, 2020	$ 213,242	$ 140,162	$ 158,090	$ 119,718	$ 631,212
Goodwill additions	1,093	2,626	1,308	25	5,052
Currency translation adjustments	(731)	(3,925)	(956)	(3,078)	(8,690)
Balance as of March 31, 2021	$ 213,604	$ 138,863	$ 158,442	$ 116,665	$ 627,574

Gross carrying amounts and accumulated amortization for definite-lived intangible assets as of March 31, 2021 and December 31, 2020 were as follows:

	Gross Carrying Amount		Accumulated Amortization	
	2021	2020	2021	2020
Customer lists and rights to sell	$ 846,052	$ 839,551	$ 110,997	$ 99,806
Trademarks, formulations and product technology	167,144	166,448	32,533	30,483
Other	6,320	6,372	5,743	5,824
Total definite-lived intangible assets	$ 1,019,516	$ 1,012,371	$ 149,273	$ 136,113

(Dollars in thousands, except per share amounts, unless otherwise stated)

The Company amortizes definite-lived intangible assets on a straight-line basis over their useful lives. The Company recorded $14.8 million and $14.0 million of amortization expense for the three months ended March 31, 2021 and 2020, respectively. Estimated annual aggregate amortization expense for the current year and subsequent five years is as follows:

For the year ended December 31, 2021	$	59,372
For the year ended December 31, 2022		59,096
For the year ended December 31, 2023		58,927
For the year ended December 31, 2024		58,427
For the year ended December 31, 2025		57,710
For the year ended December 31, 2026		57,484

The Company has four indefinite-lived intangible assets totaling $205.1 million as of both March 31, 2021 and December 31, 2020, including $204.0 million of indefinite-lived intangible assets for trademarks and tradename associated with the Combination.

Goodwill and intangible assets that have indefinite lives are not amortized and are required to be assessed at least annually for impairment. The Company completes its annual goodwill and indefinite-lived intangible asset impairment test during the fourth quarter of each year. The Company continuously evaluates if triggering events indicate a possible impairment in one or more of its reporting units or indefinite-lived or long-lived assets.

The Company previously disclosed in its 2020 Form 10-K that as of March 31, 2020, the Company concluded that the impact of COVID-19 did not represent a triggering event with regards to the Company's reporting units or indefinite-lived and long-lived assets, except for the Company's Houghton and Fluidcare trademarks and tradename indefinite-lived intangible assets. The determination of estimated fair value of the Houghton and Fluidcare trademarks and tradename indefinite-lived assets was based on a relief from royalty valuation method, which requires management's judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to the weighted average cost of capital ("WACC") and royalty rates, as well as revenue growth rates and terminal growth rates. In the first quarter of 2020, as a result of the impact of COVID-19 driving a decrease in projected legacy Houghton net sales during that year and the impact of the sales decline on projected future legacy Houghton net sales as well as an increase in the WACC assumption utilized in the quantitative impairment assessment, the Company concluded that the estimated fair values of the Houghton and Fluidcare trademarks and tradename intangible assets were less than their carrying values. As a result, an impairment charge of $38.0 million was recorded in the first quarter of 2020 to write down the carrying values of these intangible assets to their estimated fair values.

As of March 31, 2021, the Company continued to evaluate the on-going impact of COVID-19 on the Company's operations, and the volatility and uncertainty in the economic outlook as a result of COVID-19, to determine if this indicated it was more likely than not that the carrying value of any of the Company's reporting units or indefinite-lived or long-lived intangible assets were not recoverable. The Company concluded that the impact of COVID-19 did not represent a triggering event as of March 31, 2021. While the Company concluded that the impact of COVID-19 did not represent a triggering event as of March 31, 2021, the Company will continue to evaluate the impact of COVID-19 on the Company's current and projected results. If the current economic conditions worsen or projections of the timeline for recovery are significantly extended, then the Company may conclude in the future that the impact from COVID-19 requires the need to perform further interim quantitative impairment tests, which could result in additional impairment charges in the future.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 15 – Debt

Debt as of March 31, 2021 and December 31, 2020 includes the following:

	As of March 31, 2021		As of December 31, 2020	
	Interest Rate	**Outstanding Balance**	**Interest Rate**	**Outstanding Balance**
Credit Facilities:				
Revolver	1.61%	$ 190,000	1.65%	$ 160,000
U.S. Term Loan	1.61%	562,500	1.65%	570,000
EURO Term Loan	1.50%	148,210	1.50%	157,062
Industrial development bonds	5.26%	10,000	5.26%	10,000
Bank lines of credit and other debt obligations	Various	2,377	Various	2,072
Total debt		$ 913,087		$ 899,134
Less: debt issuance costs		(10,324)		(11,099)
Less: short-term and current portion of long-term debts		(43,330)		(38,967)
Total long-term debt		$ 859,433		$ 849,068

Credit facilities

The Company's primary credit facility (as amended, the "Credit Facility") is comprised of a $400.0 million multicurrency revolver (the "Revolver"), a $600.0 million term loan (the "U.S. Term Loan"), each with the Company as borrower, and a $150.0 million (as of August 1, 2019) Euro equivalent term loan (the "EURO Term Loan" and together with the "U.S. Term Loan", the "Term Loans") with Quaker Chemical B.V., a Dutch subsidiary of the Company as borrower, each with a five-year term maturing in August 2024. Subject to the consent of the administrative agent and certain other conditions, the Company may designate additional borrowers. The maximum amount available under the Credit Facility can be increased by up to $300.0 million at the Company's request if there are lenders who agree to accept additional commitments and the Company has satisfied certain other conditions. Borrowings under the Credit Facility bear interest at a base rate or LIBOR plus an applicable margin based upon the Company's consolidated net leverage ratio. There are LIBOR replacement provisions that contemplate a further amendment if and when LIBOR ceases to be reported. The variable interest rate incurred on the outstanding borrowings under the Credit Facility as of and during the three months ended March 31, 2021 was approximately 1.6%. In addition to paying interest on outstanding principal under the Credit Facility, the Company is required to pay a commitment fee ranging from 0.2% to 0.3% depending on the Company's consolidated net leverage ratio to the lenders under the Revolver in respect of the unutilized commitments thereunder. The Company has unused capacity under the Revolver of approximately $204 million, net of bank letters of credit of approximately $6 million, as of March 31, 2021.

The Credit Facility is subject to certain financial and other covenants. The Company's initial consolidated net debt to consolidated adjusted EBITDA ratio could not exceed 4.25 to 1, with step downs in the permitted ratio over the term of the Credit Facility. As of March 31, 2021, the consolidated net debt to adjusted EBITDA may not exceed 4.00 to 1. The Company's consolidated adjusted EBITDA to interest expense ratio cannot be less than 3.0 to 1 over the term of the agreement. The Credit Facility also prohibits the payment of cash dividends if the Company is in default or if the amount of the dividend paid annually exceeds the greater of $50.0 million and 20% of consolidated adjusted EBITDA unless the ratio of consolidated net debt to consolidated adjusted EBITDA is less than 2.0 to 1, in which case there is no such limitation on amount. As of March 31, 2021 and December 31, 2020, the Company was in compliance with all of the Credit Facility covenants. The Term Loans have quarterly principal amortization during their five-year terms, with 5.0% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10.0% in years 4 and 5, with the remaining principal amount due at maturity. During the three months ended March 31, 2021, the Company made quarterly amortization payments related to the Term Loans totaling $9.6 million. The Credit Facility is guaranteed by certain of the Company's domestic subsidiaries and is secured by first priority liens on substantially all of the assets of the Company and the domestic subsidiary guarantors, subject to certain customary exclusions. The obligations of the Dutch borrower are guaranteed only by certain foreign subsidiaries on an unsecured basis.

The Credit Facility required the Company to fix its variable interest rates on at least 20% of its total Term Loans. In order to satisfy this requirement as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $170.0 million notional amounts of three-year interest rate swaps at a base rate of 1.64% plus an applicable margin as provided in the Credit Facility, based on the Company's consolidated net leverage ratio. At the time the Company entered into the swaps, and as of March 31, 2021, the aggregate interest rate on the swaps, including the fixed base rate plus an applicable margin, was 3.1%. See Note 18 of Notes to Condensed Consolidated Financial Statements.

(Dollars in thousands, except per share amounts, unless otherwise stated)

The Company capitalized $23.7 million of certain third-party debt issuance costs in connection with executing the Credit Facility. Approximately $15.5 million of the capitalized costs were attributed to the Term Loans and recorded as a direct reduction of long-term debt on the Company's Condensed Consolidated Balance Sheet. Approximately $8.3 million of the capitalized costs were attributed to the Revolver and recorded within other assets on the Company's Condensed Consolidated Balance Sheet. These capitalized costs are being amortized into interest expense over the five-year term of the Credit Facility. As of March 31, 2021 and December 31, 2020, the Company had $10.3 million and $11.1 million, respectively, of debt issuance costs recorded as a reduction of long-term debt. As of March 31, 2021 and December 31, 2020, the Company had $5.5 million and $5.9 million, respectively, of debt issuance costs recorded within other assets.

Industrial development bonds

As of March 31, 2021 and December 31, 2020, the Company had fixed rate, industrial development authority bonds totaling $10.0 million in principal amount due in 2028. These bonds have similar covenants to the Credit Facility noted above.

Bank lines of credit and other debt obligations

The Company has certain unsecured bank lines of credit and discounting facilities in certain foreign subsidiaries, which are not collateralized. The Company's other debt obligations primarily consist of certain domestic and foreign low interest rate or interest-free municipality-related loans, local credit facilities of certain foreign subsidiaries and capital lease obligations. Total unused capacity under these arrangements as of March 31, 2021 was approximately $40 million.

In addition to the bank letters of credit described in the "Credit facilities" subsection above, the Company's only other off-balance sheet arrangements include certain financial and other guarantees. The Company's total bank letters of credit and guarantees outstanding as of March 31, 2021 were approximately $9 million.

The Company incurred the following debt related expenses included within Interest expense, net, in the Condensed Consolidated Statements of Operations:

	Three Months Ended March 31,	
	2021	**2020**
Interest expense	$ 4,650	$ 7,712
Amortization of debt issuance costs	1,187	1,187
Total	$ 5,837	$ 8,899

Based on the variable interest rates associated with the Credit Facility, as of March 31, 2021 and December 31, 2020, the amounts at which the Company's total debt were recorded are not materially different from their fair market value.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 16 – Equity

The following tables present the changes in equity, net of tax, for the three months ended March 31, 2021 and 2020:

	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interest	Total
Balance at December 31, 2020	$ 17,851	$ 905,171	$ 423,940	$ (26,598)	$ 550	$ 1,320,914
Net income	—	—	38,615	—	17	38,632
Amounts reported in other comprehensive loss	—	—	—	(26,630)	(2)	(26,632)
Dividends ($0.395 per share)	—	—	(7,062)	—	—	(7,062)
Share issuance and equity-based compensation plans	24	3,577	—	—	—	3,601
Balance at March 31, 2021	$ 17,875	$ 908,748	$ 455,493	$ (53,228)	$ 565	$ 1,329,453
Balance at December 31, 2019	$ 17,735	$ 888,218	$ 412,979	$ (78,170)	$ 1,604	$ 1,242,366
Cumulative effect of an accounting change	—	—	(402)	—	—	(402)
Balance at January 1, 2020	17,735	888,218	412,577	(78,170)	1,604	1,241,964
Net (loss) income	—	—	(28,381)	—	37	(28,344)
Amounts reported in other comprehensive loss	—	—	—	(43,354)	(132)	(43,486)
Dividends ($0.385 per share)	—	—	(6,834)	—	—	(6,834)
Acquisition of noncontrolling interest	—	(707)	—	—	(340)	(1,047)
Distributions to noncontrolling affiliate shareholders	—	—	—	—	(751)	(751)
Share issuance and equity-based compensation plans	17	1,022	—	—	—	1,039
Balance at March 31, 2020	$ 17,752	$ 888,533	$ 377,362	$ (121,524)	$ 418	$ 1,162,541

(Dollars in thousands, except per share amounts, unless otherwise stated)

The following tables show the reclassifications from and resulting balances of AOCI for the three months ended March 31, 2021 and 2020:

	Currency Translation Adjustments	Defined Benefit Retirement Plans	Unrealized Gain (Loss) in Available-for-Sale Securities	Derivative Instruments	Total
Balance at December 31, 2020	$ (2,875)	$ (23,467)	$ 3,342	$ (3,598)	$ (26,598)
Other comprehensive (loss) income before reclassifications	(25,459)	781	(745)	730	(24,693)
Amounts reclassified from AOCI	—	862	(3,085)	—	(2,223)
Current period other comprehensive (loss) income	(25,459)	1,643	(3,830)	730	(26,916)
Related tax amounts	—	(351)	805	(168)	286
Net current period other comprehensive (loss) income	(25,459)	1,292	(3,025)	562	(26,630)
Balance at March 31, 2021	$ (28,334)	$ (22,175)	$ 317	$ (3,036)	$ (53,228)
Balance at December 31, 2019	$ (44,568)	$ (34,533)	$ 1,251	$ (320)	$ (78,170)
Other comprehensive (loss) income before reclassifications	(54,619)	828	(2,135)	(5,170)	(61,096)
Amounts reclassified from AOCI	—	24,366	(32)	—	24,334
Current period other comprehensive (loss) income	(54,619)	25,194	(2,167)	(5,170)	(36,762)
Related tax amounts	—	(8,237)	456	1,189	(6,592)
Net current period other comprehensive (loss) income	(54,619)	16,957	(1,711)	(3,981)	(43,354)
Balance at March 31, 2020	$ (99,187)	$ (17,576)	$ (460)	$ (4,301)	$ (121,524)

All reclassifications related to unrealized gain (loss) in available-for-sale securities relate to the Company's equity interest in a captive insurance company and are recorded in equity in net income of associated companies. The amounts reported in other comprehensive income for non-controlling interest are related to currency translation adjustments.

Note 17 – Fair Value Measurements

The Company has valued its company-owned life insurance policies at fair value. These assets are subject to fair value measurement as follows:

Assets	Total Fair Value	Fair Value Measurements at March 31, 2021 Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
Company-owned life insurance	$ 2,015	$ —	$ 2,015	$ —
Total	$ 2,015	$ —	$ 2,015	$ —

Assets	Total Fair Value	Fair Value Measurements at December 31, 2020 Using Fair Value Hierarchy		
		Level 1	Level 2	Level 3
Company-owned life insurance	$ 1,961	$ —	$ 1,961	$ —
Total	$ 1,961	$ —	$ 1,961	$ —

The fair values of Company-owned life insurance assets are based on quotes for like instruments with similar credit ratings and terms. The Company did not hold any Level 3 investments as of March 31, 2021 or December 31, 2020, respectively, so related disclosures have not been included.

(Dollars in thousands, except per share amounts, unless otherwise stated)

Note 18 – Hedging Activities

In order to satisfy certain requirements of the Credit Facility as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $170.0 million notional amounts of three-year interest rate swaps. See Note 15 of Notes to Condensed Consolidated Financial Statements. These interest rate swaps are designated as cash flow hedges and, as such, the contracts are marked-to-market at each reporting date and any unrealized gains or losses are included in AOCI to the extent effective and reclassified to interest expense in the period during which the transaction effects earnings or it becomes probable that the forecasted transaction will not occur.

The balance sheet classification and fair values of the Company's derivative instruments, which are Level 2 measurements, are as follows:

		Fair Value	
	Condensed Consolidated Balance Sheet Location	**March 31, 2021**	**December 31, 2020**
Derivatives designated as cash flow hedges:			
Interest rate swaps	Other non-current liabilities	$ 3,943	$ 4,672
		$ 3,943	$ 4,672

The following table presents the net unrealized loss deferred to AOCI:

		March 31, 2021	**December 31, 2020**
Derivatives designated as cash flow hedges:			
Interest rate swaps	AOCI	$ 3,036	$ 3,598
		$ 3,036	$ 3,598

The following table presents the net gain reclassified from AOCI to earnings:

		Three Months Ended March 31,	
		2021	**2020**
Amount and location of (expense) income reclassified from AOCI into (expense) income (Effective Portion)	Interest expense, net	$ (643)	$ 19

Interest rate swaps are entered into with a limited number of counterparties, each of which allows for net settlement of all contracts through a single payment in a single currency in the event of a default on or termination of any one contract. As such, in accordance with the Company's accounting policy, these derivative instruments are recorded on a net basis by counterparty within the Condensed Consolidated Balance Sheets.

Note 19 – Commitments and Contingencies

The Company previously disclosed in its 2020 Form 10-K that AC Products, Inc. ("ACP"), a wholly owned subsidiary, has been operating a groundwater treatment system to hydraulically contain groundwater contamination emanating from ACP's site, the principal contaminant of which is perchloroethylene. As of March 31, 2021, ACP believes it is close to meeting the conditions for closure of the groundwater treatment system, but continues to operate this system while in discussions with the relevant authorities. As of March 31, 2021, the Company believes that the range of potential-known liabilities associated with the balance of the ACP water remediation program is approximately $0.1 million to $1.0 million. The low and high ends of the range are based on the length of operation of the treatment system as determined by groundwater modeling. Costs of operation include the operation and maintenance of the extraction well, groundwater monitoring and program management.

The Company previously disclosed in its 2020 Form 10-K that an inactive subsidiary of the Company that was acquired in 1978 sold certain products containing asbestos, primarily on an installed basis, and is among the defendants in numerous lawsuits alleging injury due to exposure to asbestos. During the three months ended March 31, 2021, there have been no significant changes to the facts or circumstances of this previously disclosed matter, aside from on-going claims and routine payments associated with this litigation. Based on a continued analysis of the existing and anticipated future claims against this subsidiary, it is currently projected that the subsidiary's total liability over the next 50 years for these claims is approximately $0.4 million (excluding costs of defense).

The Company previously disclosed in its 2020 Form 10-K that it is party to certain environmental matters related to certain domestic and foreign properties currently or previously owned by Houghton. These environmental matters primarily require the Company to perform long-term monitoring as well as operating and maintenance at each of the applicable sites. During the three months ended March 31, 2021, there have been no significant changes to the facts or circumstances of these previously disclosed matters, aside from on-going monitoring and maintenance activities and routine payments associated with each of the sites. The Company continually evaluates its obligations related to such matters, and based on historical costs incurred and projected costs to be incurred over the next 28 years, has estimated the present value range of costs for all of the Houghton environmental matters, on a discounted basis, to be between approximately $5 million and $6 million as of March 31, 2021, for which $5.7 million was accrued within other accrued liabilities and other non-current liabilities on the Company's Condensed Consolidated Balance Sheet as of March 31, 2021. Comparatively, as of December 31, 2020, the Company had $6.0 million accrued for with respect to these matters.

The Company believes, although there can be no assurance regarding the outcome of other unrelated environmental matters, that it has made adequate accruals for costs associated with other environmental problems of which it is aware. Approximately $0.1 million were accrued as of both March 31, 2021 and December 31, 2020, to provide for such anticipated future environmental assessments and remediation costs.

The Company previously disclosed in its 2020 Form 10-K that one of the Company's subsidiaries received a notice of inspection from a taxing authority in a country where certain of its subsidiaries operate which related to a non-income (indirect) tax that may be applicable to certain products the subsidiary sells. To date, the Company has not received any assessment from the authority related to potential liabilities that may be due from the Company's subsidiary. Consequently, there is substantial uncertainty with respect to the Company's ultimate liability with respect to this indirect tax, as the application of this tax in its given market is ambiguous and interpreted differently among other peer companies and taxing authorities. The Company, with assistance from independent experts, has performed an evaluation of the applicability of this indirect tax to the Company's subsidiaries in this country. Information available to the Company at this time is only sufficient to establish a range of probable liability, and no amount within the range is considered a better estimate than another. During the three months ended March 31, 2021 and through the date of this Report, there have been no significant changes to the facts or circumstances of this previously disclosed matter, aside from on-going discussions between the Company and the taxing authority related to this notice of inspection. As of March 31, 2021, the Company has recorded a liability of $1.7 million in other accrued liabilities, which reflects the low end of the range of probable indirect tax owed, including interest and taking into account applicable statutes of limitations. Because these amounts in part relate to a Houghton entity acquired in the Combination and for periods prior to the Combination, the Company has submitted an indemnification claim with Houghton's former owners related to this potential indirect tax liability. The Company recorded a receivable in other assets for approximately $1.1 million, which reflects the amount of the initial recorded liability for which the Company anticipates being indemnified. As noted, the Company believes there is substantial uncertainty with respect to its ultimate liability given the ambiguous application of this indirect tax. At this time, the Company's best estimate of a potential range for possible assessments, including additional amounts that may be assessed under these indirect tax laws, would be approximately $0.6 million to $38 million, which is net of approximately $10 million of estimated income tax deductions and approximately $22 million of applicable rights to indemnification from Houghton's former owners.

The Company is party to other litigation which management currently believes will not have a material adverse effect on the Company's results of operations, cash flows or financial condition. In addition, the Company has an immaterial amount of contractual purchase obligations.

Item 2. ***Management's Discussion and Analysis of Financial Condition and Results of Operations*****.**

As used in this Report, the terms "Quaker Houghton", the "Company", "we" and "our" refer to Quaker Chemical Corporation (doing business as Quaker Houghton), its subsidiaries, and associated companies, unless the context otherwise requires. As used in this Report, the term Legacy Quaker refers to the Company prior to the closing of its combination with Houghton International, Inc. ("Houghton") (herein referred to as the "Combination") on August 1, 2019. Throughout the Report, all figures presented, unless otherwise stated, reflect the results of operations of the combined company for the three months ended March 31, 2021 and 2020.

Executive Summary

Quaker Houghton is a global leader in industrial process fluids. With a presence around the world, including operations in over 25 countries, our customers include thousands of the world's most advanced and specialized steel, aluminum, automotive, aerospace, offshore, can, mining, and metalworking companies. Our high-performing, innovative and sustainable solutions are backed by best-in-class technology, deep process knowledge, and customized services. Quaker Houghton is headquartered in Conshohocken, Pennsylvania, located near Philadelphia in the United States.

The Company had a very strong start to 2021, delivering solid first quarter results which reflect the continued COVID-19 recovery in the Company's end-markets and customer demand as well as the on-going execution of integration activities and synergy realization. Specifically, net sales of $429.8 million in the first quarter of 2021 increased 14% compared to $378.6 million in the first quarter of 2020, primarily due to higher volumes, which included additional net sales from acquisitions of 3%, and the positive impact from foreign currency translation of 3%. The increase in sales volumes compared to the first quarter of 2020 was primarily due to improved end market conditions and continued market share gains. Additional net sales from acquisitions primarily were attributable to Coral Chemical ("Coral"), which the Company acquired in December 2020. The positive net impact from foreign currency translation was primarily due to the strengthening of the euro and Chinese renminbi against the U.S. dollar quarter-over-quarter, partially offset by the ongoing weakening of the Brazilian real. The Company had net income in the first quarter of 2021 of $38.6 million, or $2.15 per diluted share, compared to a first quarter of 2020 net loss of $28.4 million, or $1.60 per diluted share. The Company's prior year first quarter net loss was primarily driven by the first quarter of 2020 non-cash impairment charge of $38.0 million for certain indefinite-lived intangible assets and a non-cash $22.7 million settlement charge related to the termination of a U.S. defined benefit pension plan. Excluding these non-recurring items as well as costs associated with the Combination and other non-core items in each period, the Company's first quarter of 2021 non-GAAP earnings per diluted share were $2.11 compared to $1.38 in the prior year first quarter. The Company's current quarter adjusted EBITDA of $77.1 million increased 28% compared to $60.5 million in the first quarter of 2020 primarily due to the significant increase in net sales quarter over quarter and incremental realized cost synergies from the Combination as compared to the first quarter of 2020. The Company estimates that it realized cost synergies associated with the Combination of approximately $18 million during the first quarter of 2021 compared to approximately $10 million during the first quarter of 2020. See the Non-GAAP Measures section of this Item below, as well as other items discussed in the Company's Consolidated Operations Review in the Operations section of this Item, below.

The Company's first quarter of 2021 operating performance in each of its four reportable segments: (i) Americas; (ii) Europe, Middle East and Africa ("EMEA"); (iii) Asia/Pacific; and (iv) Global Specialty Businesses, reflect similar drivers to that of its consolidated performance. All four segments had higher net sales compared to the first quarter of 2020. The Company's higher sales volumes were driven by EMEA and Asia/Pacific, while additional net sales from Coral benefited the Americas and the Global Specialty Businesses. The growth in Asia/Pacific's volumes compared to the prior year were partially due to the initial impacts of COVID-19 in China during the first quarter of 2020, whereas all of the remaining segments weren't impacted as severely until the second quarter of 2020. The benefit of higher selling price and product mix positively impacted most of the segments, and foreign currency translation benefited all segments except the Americas which was driven by the ongoing weakening of the Brazilian real quarter over quarter. As reported, all of the Company's segment operating earnings were higher compared to the first quarter of 2020 which reflects higher current quarter net sales coupled with a higher gross margin in all segments as compared to the prior year first quarter. While the Company has experienced higher raw material costs beginning in the fourth quarter of 2020 and continuing into 2021, the higher gross margin as compared to the prior year first quarter was primarily driven by the Company's continued execution of Combination-related logistics, procurement and manufacturing cost savings initiatives as well as the benefit of higher volumes in the current quarter and the related impact from fixed manufacturing costs. Direct Selling, general and administrative expenses ("SG&A") of each segment were relatively consistent with the first quarter of 2020 with only Asia/Pacific up as a result of the segments strong current quarter performance compared to the prior year which was negatively impacted by the initial COVID-19 conditions in China. In addition, the Company and all of its segments continued to maintain strong cost control and benefit from COVID-19 cost savings actions, including lower travel expenses, as well as the benefits of realized cost savings associated with the Combination. Additional details of each segment's operating performance are further discussed in the Company's Reportable Segments Review, in the Operations section of this Item, below.

The Company had a net operating cash outflow of $12.6 million in the first quarter of 2021 as compared to a net operating cash inflow of $20.2 million in the first quarter of 2020. The decrease in net operating cash flow quarter-over-quarter was primarily driven by a significant change in working capital, as the Company's significant increase in net sales and volumes resulted in a large increase in accounts receivable in the first quarter of 2021. The key drivers of the Company's operating cash flow and working capital are further discussed in the Company's Liquidity and Capital Resources section of this Item, below.

Overall, the Company's first quarter results were strong with sequential and prior year improvement in all segments primarily due to the continued recovery in our end-markets and customer demand increases from lower levels experienced during 2020 as a result of COVID-19. The results in the first quarter of 2021 reflected a strong quarterly growth trend across the globe beginning after the second quarter of 2020, during which the impacts of COVID-19 were most severe. Also, the strong demand in the first quarter of 2021 coupled with continued market share gains and the on-going execution of integration activities and synergy realization helped offset negative impacts due to the on-going global uncertainty brought on by COVID-19 and other macroeconomic headwinds, including rising raw material prices and overall supply chain pressures.

The global economic slowdown and other impacts due to COVID-19 experienced by almost all companies in 2020 posed an unprecedented challenge, but the Company's first quarter of 2021 results continue to demonstrate that it can successfully navigate through market downturns by responding quickly to changing market conditions and delivering on the benefits it anticipated from the Combination with Houghton. As the Company looks forward, it expects to experience continued short-term headwinds from higher raw material costs and supply chain pressures, with the magnitude of these raw material cost increases being considerably higher than the Company previously expected due to stress on global supply chains, weather related shutdowns and unexpected supplier shutdowns. However, the Company does expect to achieve additional selling price increases to offset these rising raw material costs, but there will be a lag effect on our gross margin as these price increases catchup to our rising raw material costs. Despite these near term headwinds, the Company continues to expect 2021 to result in a step change in its profitability from 2020 as the Company completes its integration cost synergies, continues to take further share in the marketplace, benefits from the projected gradual rebound in demand, and sees the positive impact of its recent acquisitions.

On-going impact of COVID-19

The global outbreak of COVID-19 has negatively impacted all locations where the Company does business. Although the Company has now operated in this COVID-19 environment for a year, the full extent of the outbreak and related business impacts remain uncertain and volatile, and therefore the full extent to which COVID-19 may impact the Company's future results of operations or financial condition is uncertain. This outbreak has significantly disrupted the operations of the Company and those of its suppliers and customers. The Company has experienced volume declines and lower net sales as compared to pre-COVID-19 levels as a result of the outbreak, as further described in this section. Management continues to monitor the impact that the COVID-19 pandemic is having on the Company, the overall specialty chemical industry and the economies and markets in which the Company operates. Given the speed and frequency of the continuously evolving developments with respect to this pandemic, the Company cannot, as of the date of this Report, reasonably estimate the magnitude or the full extent of the impact to its future results of operations or to the ability of it or its customers to resume more normal operations, even as certain restrictions are lifted. The prolonged pandemic and a resurgence of the outbreak, and continued restrictions on day-to-day life and business operations may result in volume declines and lower net sales in future periods as compared to pre-COVID-19 levels. To the extent that the Company's customers and suppliers continue to be significantly and adversely impacted by COVID-19, this could reduce the availability, or result in delays, of materials or supplies to or from the Company, which in turn could significantly interrupt the Company's business operations. Given this ongoing uncertainty, the Company cautions that its future results of operations could be significantly adversely impacted by COVID-19. Further, management continues to evaluate how COVID-19-related circumstances, such as remote work arrangements, illness or staffing shortages and travel restrictions have affected financial reporting processes and systems, internal control over financial reporting, and disclosure controls and procedures. While the circumstances have presented and are expected to continue to present challenges, and have necessitated additional time and resources to be deployed to sufficiently address the challenges brought on by the pandemic, at this time, management does not believe that COVID-19 has had a material impact on financial reporting processes, internal controls over financial reporting, or disclosure controls and procedures.

The Company's top priority is, and especially during this pandemic remains, to protect the health and safety of its employees and customers, while working to ensure business continuity to meet customers' needs. The Company continues to take steps to protect the health and wellbeing of its people in affected areas through various actions, including enabling work at home where needed and possible, and employing social distancing standards, implementing travel restrictions where applicable, enhancing onsite hygiene practices, and instituting visitation restrictions at the Company's facilities. The Company has not and does not expect that it will incur material expenses implementing these health and safety policies. All of the Company's 31 production facilities worldwide are open and operating and are deemed as essential businesses in the jurisdictions where they are operating. The Company believes that to date it has been able to meet the needs of all its customers across the globe despite the current economic challenges. The Company's first quarter of 2021 continued the trend of gradual sequential quarterly improvement which began in the second half of 2020. However, demand still remains uncertain as many customers maintained reduced production levels into the first quarter of 2021. The Company continues to expect that the impact from COVID-19 will gradually improve subject to the effective containment of the virus and its variants and successful distribution and acceptance of the vaccines that have been developed. However, the incidence of reported cases of COVID-19 in several geographies where we have significant operations remains high and it remains highly uncertain as to how long the global pandemic and related economic challenges will last and when our customers' businesses will recover to pre-COVID-19 levels. The Company took various actions to temporarily conserve cash and reduce costs during and these temporary initiatives were designed and implemented so that the Company could successfully manage through the challenging COVID-19 situation while continuing to protect the health of its employees, meet customers' needs, maintain the Company's long-term competitive advantages and above-market growth, and enable it to continue to effectively integrate Houghton. While the actions taken to date to protect our workforce, to continue to serve our customers with excellence and to conserve cash and reduce costs, have been effective thus far, further actions to respond to the pandemic and its effects may be necessary as conditions continue to evolve.

Liquidity and Capital Resources

At March 31, 2021, the Company had cash, cash equivalents and restricted cash of $163.5 million. Total cash, cash equivalents and restricted cash was $181.9 million at December 31, 2020. The approximately $18.4 million decrease in cash, cash equivalents and restricted cash was the net result of $15.8 million of cash used in investing activities, $12.6 million of cash used in operating activities and a $3.0 million negative impact due to the effect of foreign currency translation partially offset by $13.0 million of cash provided by financing activities.

Net cash flows used in operating activities were $12.6 million in the first three months of 2021 compared to net cash flows provided by operating activities of $20.2 million in the first three months of 2020. The decrease in net operating cash flows of $32.8 million was primarily driven by a significant change in working capital, as the significant increase in current quarter net sales resulted in a large increase in accounts receivable in the first three months of 2021. In addition, the Company had higher cash dividends received from its associated companies in the first three months of 2020, primarily due to $5.0 million received from the Company's joint venture in Korea with no similar dividend received in the first three months of 2021 related to the timing of dividends received.

Net cash flows used in investing activities were $15.8 million in the first three months of 2021 compared to $8.0 million in the first three months of 2020. This increase in cash outflows was driven by increases in higher cash payments related to acquisitions during the three months ending March 31, 2021, including $25.0 million for certain assets related to tin-plating solutions primarily for steel end markets. These higher cash outflows were partially offset by cash proceeds of approximately $14.7 million from the disposition of assets, which includes the sale of certain held-for-sale real property assets related to the Combination.

Net cash flows provided by financing activities were $13.0 million in the first three months of 2021 compared to $186.6 million in the first three months of 2020. The decrease of $173.6 million in net cash flows was primarily related to the prior year borrowings of most of the available liquidity under the Company's revolving credit facility related to the economic uncertainty brought on by COVID-19. In addition, the Company paid $7.1 million of cash dividends during the first three months of 2021, a $0.2 million or 3% increase in cash dividends compared to the prior year. Finally, during the first three months of 2020, the Company used $1.0 million to purchase the remaining noncontrolling interest in a South Africa affiliate. Prior to this buyout, this South Africa affiliate made a distribution to the prior noncontrolling affiliate shareholder of approximately $0.8 million in the three months of 2020. There were no similar noncontrolling interest activities in the first three months of 2021.

The Company's primary credit facility (the "Credit Facility") is comprised of a $400.0 million multicurrency revolver (the "Revolver"), a $600.0 million term loan (the "U.S. Term Loan"), each with the Company as borrower, and a $150.0 million (as of August 1, 2019) Euro equivalent term loan (the "Euro Term Loan" and together with the U.S. Term Loan", the "Term Loans") with Quaker Chemical B.V., a Dutch subsidiary of the Company as borrower, each with a five-year term maturing in August 2024. Subject to the consent of the administrative agent and certain other conditions, the Company may designate additional borrowers. The maximum amount available under the Credit Facility can be increased by up to $300.0 million at the Company's request if there are lenders who agree to accept additional commitments and the Company has satisfied certain other conditions. Borrowings under the Credit Facility bear interest at a base rate or LIBOR plus an applicable margin based on the Company's consolidated net leverage ratio. There are LIBOR replacement provisions that contemplate a further amendment if and when LIBOR ceases to be reported. The weighted average interest rate incurred on the outstanding borrowings under the Credit Facility during both the first quarter of 2021 and as of March 31, 2021 was approximately 1.6%. In addition to paying interest on outstanding principal under the Credit Facility, the Company is required to pay a commitment fee ranging from 0.2% to 0.3% depending on the Company's consolidated net leverage ratio to the lenders under the Revolver in respect of the unutilized commitments thereunder.

The Credit Facility is subject to certain financial and other covenants. The Company's initial consolidated net debt to consolidated adjusted EBITDA ratio could not exceed 4.25 to 1, with step downs in the permitted ratio over the term of the Credit Facility. As of March 31, 2021, the consolidated net debt to consolidated adjusted EBITDA ratio may not exceed 4.00 to 1. The Company's consolidated adjusted EBITDA to interest expense ratio may not be less than 3.0 to 1 over the term of the agreement. The Credit Facility also prohibits the payment of cash dividends if the Company is in default or if the amount of the dividends paid annually exceeds the greater of $50.0 million and 20% of consolidated adjusted EBITDA unless the ratio of consolidated net debt to consolidated adjusted EBITDA is less than 2.0 to 1, in which case there is no such limitation on amount. As of March 31, 2021 and

December 31, 2020, the Company was in compliance with all of the Credit Facility covenants. The Term Loans have quarterly principal amortization during their five-year terms, with 5.0% amortization of the principal balance due in years 1 and 2, 7.5% in year 3, and 10.0% in years 4 and 5, with the remaining principal amount due at maturity. The Credit Facility is guaranteed by certain of the Company's domestic subsidiaries and is secured by first priority liens on substantially all of the assets of the Company and the domestic subsidiary guarantors, subject to certain customary exclusions. The obligations of the Dutch borrower are guaranteed only by certain foreign subsidiaries on an unsecured basis.

The Credit Facility required the Company to fix its variable interest rates on at least 20% of its total Term Loans. In order to satisfy this requirement as well as to manage the Company's exposure to variable interest rate risk associated with the Credit Facility, in November 2019, the Company entered into $170.0 million notional amounts of three-year interest rate swaps at a base rate of 1.64% plus an applicable margin as provided in the Credit Facility, based on the Company's consolidated net leverage ratio. At the time the Company entered into the swaps, and as of March 31, 2021, the aggregate interest rate on the swaps, including the fixed base rate plus an applicable margin, was 3.1%.

The Company capitalized $23.7 million of certain third-party debt issuance costs in connection with executing the Credit Facility. Approximately $15.5 million of the capitalized costs were attributed to the Term Loans and recorded as a direct reduction of long-term debt on the Company's Consolidated Balance Sheet. Approximately $8.3 million of the capitalized costs were attributed to the Revolver and recorded within other assets on the Company's Condensed Consolidated Balance Sheet. These capitalized costs are being amortized into interest expense over the five-year term of the Credit Facility.

As of March 31, 2021, the Company had Credit Facility borrowings outstanding of $900.7 million. As of December 31, 2020, the Company had Credit Facility borrowings outstanding of $887.1 million. The Company has unused capacity under the Revolver of approximately $204 million, net of bank letters of credit of approximately $6 million, as of March 31, 2021. The Company's other debt obligations are primarily industrial development bonds, bank lines of credit and municipality-related loans, which totaled $12.4 million and $12.1 million as of March 31, 2021 and December 31, 2020, respectively. Total unused capacity under these arrangements as of March 31, 2021 was approximately $40 million. The Company's total net debt as of March 31, 2021 was $749.6 million.

The Company estimates that it realized cost synergies in the first quarter of 2021 of approximately $18 million compared to approximately $10 million in the first quarter of 2020. The Company continues to expect to realize Combination cost synergies of approximately $75 million in 2021 and $80 million in 2022. The Company continues to expect to incur additional costs and make associated cash payments to integrate Quaker and Houghton and continue realizing the Combination's total anticipated cost synergies. The Company expects total cash payments, including those pursuant to the QH Program, described below, but excluding incremental capital expenditures related to the Combination, will be approximately 1.3 times its total anticipated 2022 cost synergies of $80 million. A significant portion of these costs were already incurred in 2019, 2020 and the first quarter of 2021, but the Company expects to continue to incur such costs throughout the remainder of 2021. The Company incurred $0.8 million of total Combination, integration and other acquisition-related expenses in the first quarter of 2021, which includes $0.4 million of accelerated depreciation and is net of a $5.4 million gain on the sale of certain held-for-sale real property assets, described in the Non-GAAP Measures section of this Item below. Comparatively, in the first quarter of 2020, the Company incurred $8.3 million of total Combination, integration and other acquisition-related expenses, including $0.5 million of accelerated depreciation. The Company had aggregate net cash outflows of approximately $8.7 million related to the Combination, integration and other acquisition-related expenses during the first three months of 2021 as compared to $8.3 million during the first three months of 2020.

Quaker Houghton's management approved, and the Company initiated, a global restructuring plan (the "QH Program") in the third quarter of 2019 as part of its planned cost synergies associated with the Combination. The QH Program includes restructuring and associated severance costs to reduce total headcount by approximately 400 people globally and plans for the closure of certain manufacturing and non-manufacturing facilities. In connection with the plans for closure of certain manufacturing and non-manufacturing facilities, the Company made a decision to make available for sale certain facilities during the second quarter of 2020. During the first quarter of 2021, certain of these facilities were sold and the Company recognized a gain on disposal of $5.4 million included within other income (expense), net on the Condensed Consolidated Statement of Operations. The exact timing and total costs associated with the QH Program will depend on a number of factors and is subject to change; however, reductions in headcount and site closures have continued into 2021. The Company currently expects additional headcount reductions and site closures to occur into 2022 and estimates that the anticipated cost synergies realized under the QH Program will approximate one-times restructuring costs incurred. The Company made cash payments related to the settlement of restructuring liabilities under the QH Program during the first three months of 2021 of approximately $1.2 million compared to $4.9 million in the first three months of 2020.

As of March 31, 2021, the Company's gross liability for uncertain tax positions, including interest and penalties, was $30.0 million. The Company cannot determine a reliable estimate of the timing of cash flows by period related to its uncertain tax position liability. However, should the entire liability be paid, the amount of the payment may be reduced by up to $7.5 million as a result of offsetting benefits in other tax jurisdictions. During the fourth quarter of 2020, one of the Company's subsidiaries received a notice of inspection from a taxing authority in a country where certain of its subsidiaries operate, which relate to a non-income (indirect) tax that may be applicable to certain products the subsidiary sells. To date, the Company has not received any assessment from the authority related to potential liabilities that may be due from the Company's subsidiary. Consequently there is substantial uncertainty with respect to the Company's ultimate liability with respect to this indirect tax. See Note 19 of Notes to Condensed Consolidated Financial Statements in Item 1 of this Report.

The Company believes that its existing cash, anticipated cash flows from operations and available additional liquidity will be sufficient to support its operating requirements and fund its business objectives for at least the next twelve months, including but not limited to, payments of dividends to shareholders, costs related to the Combination and integration, pension plan contributions, capital expenditures, other business opportunities (including potential acquisitions) and other potential contingencies. The Company's liquidity is affected by many factors, some based on normal operations of our business and others related to the impact of the pandemic on our business and on global economic conditions as well as industry uncertainties, which we cannot predict. We also cannot predict economic conditions and industry downturns or the timing, strength or duration of recoveries. We may seek, as we believe appropriate, additional debt or equity financing which would provide capital for corporate purposes, working capital funding, additional liquidity needs or to fund future growth opportunities, including possible acquisitions and investments. The timing and amount of potential capital requirements cannot be determined at this time and will depend on a number of factors, including the actual and projected demand for our products, specialty chemical industry conditions, competitive factors, and the condition of financial markets, among others.

Non-GAAP Measures

The information in this Form 10-Q filing includes non-GAAP (unaudited) financial information that includes EBITDA, adjusted EBITDA, adjusted EBITDA margin, non-GAAP operating income, non-GAAP operating margin, non-GAAP net income and non-GAAP earnings per diluted share. The Company believes these non-GAAP financial measures provide meaningful supplemental information as they enhance a reader's understanding of the financial performance of the Company, are indicative of future operating performance of the Company, and facilitate a comparison among fiscal periods, as the non-GAAP financial measures exclude items that are not considered indicative of future operating performance or not considered core to the Company's operations. Non-GAAP results are presented for supplemental informational purposes only and should not be considered a substitute for the financial information presented in accordance with GAAP.

The Company presents EBITDA which is calculated as net income (loss) attributable to the Company before depreciation and amortization, interest expense, net, and taxes on income (loss) before equity in net income of associated companies. The Company also presents adjusted EBITDA which is calculated as EBITDA plus or minus certain items that are not considered indicative of future operating performance or not considered core to the Company's operations. In addition, the Company presents non-GAAP operating income which is calculated as operating income (loss) plus or minus certain items that are not considered indicative of future operating performance or not considered core to the Company's operations. Adjusted EBITDA margin and non-GAAP operating margin are calculated as the percentage of adjusted EBITDA and non-GAAP operating income to consolidated net sales, respectively. The Company believes these non-GAAP measures provide transparent and useful information and are widely used by analysts, investors, and competitors in our industry as well as by management in assessing the operating performance of the Company on a consistent basis.

Additionally, the Company presents non-GAAP net income and non-GAAP earnings per diluted share as additional performance measures. Non-GAAP net income is calculated as adjusted EBITDA, defined above, less depreciation and amortization, interest expense, net, and taxes on income before equity in net income of associated companies, in each case adjusted, as applicable, for any depreciation, amortization, interest or tax impacts resulting from the non-core items identified in the reconciliation of net income attributable to the Company to adjusted EBITDA. Non-GAAP earnings per diluted share is calculated as non-GAAP net income per diluted share as accounted for under the "two-class share method." The Company believes that non-GAAP net income and non-GAAP earnings per diluted share provide transparent and useful information and are widely used by analysts, investors, and competitors in our industry as well as by management in assessing the operating performance of the Company on a consistent basis.

The following tables reconcile the Company's non-GAAP financial measures (unaudited) to their most directly comparable GAAP (unaudited) financial measures (dollars in thousands unless otherwise noted except per share amounts):

Non-GAAP Operating Income and Margin Reconciliations	**Three Months Ended March 31,**	
	2021	**2020**
Operating income (loss)	$ 44,894	$ (12,444)
Houghton combination, integration and other acquisition-related expenses (a)	6,230	8,276
Restructuring and related charges (b)	1,175	1,716
Fair value step up of acquired inventory sold (c)	801	—
CEO transition costs (d)	504	—
Inactive subsidiary's non-operating litigation costs (e)	51	—
Customer bankruptcy costs (f)	—	463
Indefinite-lived intangible asset impairment (g)	—	38,000
Non-GAAP operating income	$ 53,655	$ 36,011
Non-GAAP operating margin (%) (m)	12.5%	9.5%

EBITDA, Adjusted EBITDA, Adjusted EBITDA Margin and Non-GAAP Net Income Reconciliations	**Three Months Ended March 31,**	
	2021	**2020**
Net income (loss) attributable to Quaker Chemical Corporation	$ 38,615	$ (28,381)
Depreciation and amortization (a) (l)	22,448	21,584
Interest expense, net	5,470	8,461
Taxes on income (loss) before equity in net income of associated companies	10,689	(13,070)
EBITDA	$ 77,222	$ (11,406)
Equity (income) loss in a captive insurance company (h)	(3,080)	327
Houghton combination, integration and other acquisition-related expenses (a)	427	7,803
Restructuring and related charges (b)	1,175	1,716
Fair value step up of acquired inventory sold (c)	801	—
CEO transition costs (d)	504	—
Inactive subsidiary's non-operating litigation costs (e)	51	—
Customer bankruptcy costs (f)	—	463
Indefinite-lived intangible asset impairment (g)	—	38,000
Pension and postretirement benefit costs, non-service components (i)	(124)	23,525
Currency conversion impacts of hyper-inflationary economies (j)	172	51
Adjusted EBITDA	$ 77,148	$ 60,479
Adjusted EBITDA margin (%) (m)	18.0%	16.0%
Adjusted EBITDA	$ 77,148	$ 60,479
Less: Depreciation and amortization - adjusted (a)	22,033	21,111
Less: Interest expense, net	5,470	8,461
Less: Taxes on income before equity in net income of associated companies - adjusted (a)(n)	11,739	6,463
Non-GAAP net income	$ 37,906	$ 24,444

Non-GAAP Earnings per Diluted Share Reconciliations	Three Months Ended March 31, 2021	2020
GAAP earnings (loss) per diluted share attributable to Quaker Chemical Corporation common shareholders	$ 2.15	$ (1.60)
Equity (income) loss in a captive insurance company per diluted share (h)	(0.17)	0.02
Houghton combination, integration and other acquisition-related expenses per diluted share (a)	0.04	0.36
Restructuring and related charges per diluted share (b)	0.05	0.07
Fair value step up of acquired inventory sold per diluted share (c)	0.03	—
CEO transition costs per diluted share (d)	0.02	—
Inactive subsidiary's non-operating litigation costs per diluted share (e)	0.00	—
Customer bankruptcy costs per diluted share (f)	—	0.02
Indefinite-lived intangible asset impairment per diluted share (g)	—	1.65
Pension and postretirement benefit costs, non-service components per diluted share (i)	(0.00)	0.88
Currency conversion impacts of hyper-inflationary economies per diluted share (j)	0.01	0.00
Impact of certain discrete tax items per diluted share (k)	(0.02)	(0.02)
Non-GAAP earnings per diluted share (o)	$ 2.11	$ 1.38

(a) Houghton combination, integration and other acquisition-related expenses include certain legal, financial, and other advisory and consultant costs incurred in connection with post-closing integration activities including internal control readiness and remediation. These costs are not indicative of the future operating performance of the Company. Approximately $0.1 million for the three months ended March 31, 2021 of these pre-tax costs were considered non-deductible for the purpose of determining the Company's effective tax rate, and, therefore, taxes on income before equity in net income of associated companies - adjusted reflects the impact of these items. During the three months ended March 31, 2021 and 2020, the Company recorded $0.4 million and $0.5 million, respectively, of accelerated depreciation related to certain of the Company's facilities, which is included in the caption "Houghton combination, integration and other acquisition-related expenses" in the reconciliation of operating income (loss) to non-GAAP operating income and included in the caption "Depreciation and amortization" in the reconciliation of net income (loss) attributable to the Company to EBITDA, but excluded from the caption "Depreciation and amortization – adjusted" in the reconciliation of adjusted EBITDA to non-GAAP net income attributable to the Company. During the three months ended March 31, 2021, the Company recorded a $5.4 million gain on the sale of certain held-for-sale real property assets related to the Combination which is included in the caption "Houghton, combination, integration and other acquisition-related expenses" in the reconciliation of GAAP earnings (loss) per diluted share attributable to Quaker Chemical Corporation common shareholders to Non-GAAP earnings per diluted share as well as the reconciliation of net income (loss) attributable to Quaker Chemical Corporation to Adjusted EBITDA and Non-GAAP net income.

(b) Restructuring and related charges represents the costs incurred by the Company associated with the QH restructuring program which was initiated in the third quarter of 2019 as part of the Company's plan to realize cost synergies associated with the Combination. These costs are not indicative of the future operating performance of the Company. See Note 7 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(c) Fair value step up of inventory sold relates to expenses associated with selling inventory from acquired businesses which was adjusted to fair value as part of purchase accounting. These increases in costs of goods sold ("COGS") are not indicative of the future operating performance of the Company.

(d) CEO transition costs represent the costs related to the Company's on-going search for a new CEO in connection with the previously announced executive transition planned for the end of 2021. These expenses are not indicative of the future operating performance of the Company.

(e) Inactive subsidiary's non-operating litigation costs represents the charges incurred by an inactive subsidiary of the Company and are a result of the termination of restrictions on insurance settlement reserves as previously disclosed in the Company's 2020 Form 10-K. These charges are not indicative of the future operating performance of the Company. See Note 9 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(f) Customer bankruptcy costs represent the costs associated with a specific reserve for trade accounts receivable related to a customer who filed for bankruptcy protection. These expenses are not indicative of the future operating performance of the Company.

(g) Indefinite-lived intangible asset impairment represents the non-cash charge taken to write down the value of certain indefinite-lived intangible assets associated with the Houghton Combination. The Company has no prior history of goodwill or intangible asset impairments and this charge is not indicative of the future operating performance of the Company. See Note 14 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(h) Equity (income) loss in a captive insurance company represents the after-tax (income) loss attributable to the Company's interest in Primex, Ltd. ("Primex"), a captive insurance company. The Company holds a 32% investment in and has significant influence over Primex, and therefore accounts for this interest under the equity method of accounting. The income attributable to Primex is not indicative of the future operating performance of the Company and is not considered core to the Company's operations.

(i) Pension and postretirement benefit costs, non-service components represent the pre-tax, non-service component of the Company's pension and postretirement net periodic benefit cost in each period. These costs are not indicative of the future operating performance of the Company. The amount in the three months ended March 31, 2020 includes the $22.7 million settlement charge for the Company's termination of the Legacy Quaker U.S. Pension Plan. See Note 9 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(j) Currency conversion impacts of hyper-inflationary economies represents the foreign currency remeasurement impacts associated with the Company's affiliates whose local economies are designated as hyper-inflationary under U.S. GAAP. During both the three months ended March 31, 2021 and 2020, the Company incurred non-deductible, pre-tax charges related to the Company's Argentine affiliates. The charges incurred related to the immediate recognition of foreign currency remeasurement in the Condensed Consolidated Statements of Operations associated with these entities are not indicative of the future operating performance of the Company. See Note 1 of Notes to Condensed Consolidated Financial Statements, which appears in Item 1 of this Report.

(k) The impact of certain discrete tax items includes the impact of changes in certain valuation allowances recorded on certain of the Company's foreign tax credits, changes in withholding rates and the associated impact on previously accrued for distributions at certain of the Company's Asia/Pacific subsidiaries as well as the offsetting impact and amortization of a deferred tax benefit the Company recorded in the fourth quarter of 2019 related to an intercompany intangible asset transfer.

(l) Depreciation and amortization for the three months ended March 31, 2021 and 2020 included $0.3 million and $0.4 million, respectively, of amortization expense recorded within equity in net income of associated companies in the Company's Condensed Consolidated Statement of Operations, which is attributable to the amortization of the fair value step up for the Company's 50% interest in a Houghton joint venture in Korea as a result of required purchase accounting.

(m) The Company calculates adjusted EBITDA margin and non-GAAP operating margin as the percentage of adjusted EBITDA and non-GAAP operating income to consolidated net sales.

(n) Taxes on income before equity in net income of associated companies – adjusted presents the impact of any current and deferred income tax expense (benefit), as applicable, of the reconciling items presented in the reconciliation of net income (loss) attributable to Quaker Chemical Corporation to adjusted EBITDA, and was determined utilizing the applicable rates in the taxing jurisdictions in which these adjustments occurred, subject to deductibility. Houghton combination, integration and other acquisition-related expenses described in (a) resulted in incremental taxes of $0.1 million and $2.0 million during the three months ended March 31, 2021 and 2020, respectively. Restructuring and related charges described in (b) resulted in incremental taxes of $0.2 million and $0.4 million during the three months ended March 31, 2021 and 2020, respectively. Fair value step up of inventory sold described in (c) resulted in incremental taxes of $0.2 million during the three months ending March 31, 2021. CEO transition expenses described in (d) resulted in incremental taxes of $0.1 million during the three months ended March 31, 2021. Inactive subsidiary litigation described in (e) resulted in incremental taxes of less than $0.1 million during the three months ended March 31, 2021. Customer bankruptcy costs described in (f) resulted in incremental taxes of $0.1 million during the three months ended March 31, 2020. Indefinite-lived intangible asset impairment described in (g) resulted in incremental taxes of $8.7 million during the three months ended March 31, 2020. Pension and postretirement benefit costs, non-service components described in (i) resulted in a tax benefit of less than $0.1 million and incremental taxes of $7.9 million for the three months ended March 31, 2021 and 2020, respectively. Tax impact of certain discrete items described in (k) above resulted in a tax benefit of $0.4 million during each of the three months ended March 31, 2021 and 2020.

(o) The Company calculates non-GAAP earnings per diluted share as non-GAAP net income attributable to the Company per weighted average diluted shares outstanding using the "two-class share method" to calculate such in each given period.

Off-Balance Sheet Arrangements

The Company had no material off-balance sheet items, as defined under Item 303(a)(4) of Regulation S-K as of March 31, 2021. The Company's only off-balance sheet items outstanding as of March 31, 2021 represented approximately $9 million of total bank letters of credit and guarantees. The bank letters of credit and guarantees are not significant to the Company's liquidity or capital resources. See Note 15 of Notes to Condensed Consolidated Financial Statements in Item 1 of this Report.

Operations

Consolidated Operations Review – Comparison of the First Quarter of 2021 with the First Quarter of 2020

Net sales were $429.8 million in the first quarter of 2021 compared to $378.6 million in the first quarter of 2020. The net sales increase of $51.2 million or 14% quarter-over-quarter reflects a benefit from higher sales volumes of 5%, additional net sales from recent acquisitions of 3%, the positive impact from foreign currency translation of 3% and increases in selling price and product mix of approximately 3%. The increase in sales volumes compared to the first quarter of 2020 was primarily due to improved end market conditions and continued market share gains. Additional net sales from acquisition primarily related to sales attributable to Coral, which the Company acquired in December 2020.

COGS were $273.6 million in the first quarter of 2021 compared to $244.7 million in the first quarter of 2020. The increase in COGS of $28.9 million or 12% was driven by the associated COGS on the increase in net sales as described above, and, to a lesser extent, an expense of $0.8 million associated with selling acquired Coral inventory at its fair value described in the Non-GAAP Measures section of this Item above.

Gross profit in the first quarter of 2021 increased $22.3 million or 17% from the first quarter of 2020, due primarily to the increase in net sales. The Company's reported gross margin in the first quarter of 2021 was 36.3% compared to 35.4% in the first quarter of 2020. The Company's current quarter gross margin includes the impact of the inventory fair value step up described above. Excluding this and other one-time increases to COGS including accelerated depreciation in both periods, described in the Non-GAAP Measures section of this Item above, the Company estimates that its gross margins in the first quarters of 2021 and 2020 would have been approximately 36.6% and 35.5%, respectively. While the Company has experienced higher raw material costs beginning in the fourth quarter of 2020 and continuing into 2021, the higher gross margin as compared to the prior year first quarter was primarily driven by the Company's continued execution of Combination-related logistics, procurement and manufacturing cost savings initiatives as well as the benefit of higher volumes in the current quarter and the related impact from fixed manufacturing costs.

SG&A in the first quarter of 2021 increased $5.6 million or 6% compared to the first quarter of 2020 due primarily to additional SG&A from acquisitions, increases due to foreign currency translation and $0.5 million of CEO transition costs described in the Non-GAAP Measures section of this Item, above, partially offset by lower travel expenses and a decrease in the service component of the Company's pension and postretirement benefits as a result of the first quarter of 2020 termination of its Legacy Quaker U.S. pension plan.

During the first quarter of 2021 the Company incurred $5.8 million of Combination, integration and other acquisition-related expenses primarily for professional fees related to Houghton integration and other acquisition-related activities. Comparatively, the Company incurred $7.9 million of expenses in the prior year first quarter, primarily due to various professional fees related to legal, financial and other advisory and consultant expenses for integration activities. See the Non-GAAP Measures section of this Item, above.

The Company initiated a restructuring program during the third quarter of 2019 as part of its global plan to realize cost synergies associated with the Combination that occurred during 2019 and 2020 and are expected to continue throughout 2021. The Company incurred restructuring and related charges for reductions in headcount and site closures under this program of $1.2 million and $1.7 million during the first quarters of 2021 and 2020, respectively. See the Non-GAAP Measures section of this Item, above.

During the first quarter of 2020, the Company recorded a $38.0 million non-cash impairment charge to write down the value of certain indefinite-lived intangible assets associated with the Combination. This non-cash impairment charge was related to certain acquired Houghton trademarks and tradenames and was primarily the result of the projected negative impacts of COVID-19 as of March 31, 2020 on their estimated fair values. There was no similar impairment charges recorded during the first quarter of 2021.

Operating income in the first quarter of 2021 was $44.9 million compared to an operating loss of $12.4 million in the first quarter of 2020. Excluding Combination, integration and other acquisition-related expenses, restructuring and related charges, the indefinite-lived intangible asset impairment charge, and other expenses that are not indicative of the future operating performance of the Company described in the Non-GAAP Measures section of this Item, above, the Company's current quarter non-GAAP operating income increased to $53.7 million compared to $36.0 million in the prior year first quarter primarily due to the increase in net sales described above and the benefits from cost savings initiatives related to the Combination.

The Company had other income, net, of $4.7 million in the first quarter of 2021 compared to other expense, net of $21.2 million in the first quarter of 2020. The quarter-over-quarter change was primarily due to the first quarter of 2021 gain on the sale of certain held-for-sale real property assets compared to the first quarter of 2020 pension plan settlement charge associated with the termination of the Legacy Quaker U.S. Pension Plan. See the Non-GAAP Measures section of this Item, above. Partially offsetting these impacts quarter-over-quarter were foreign currency transaction losses of $1.5 million in the first quarter of 2021 compared to foreign currency transaction gains of $0.8 million in the first quarter of 2020.

Interest expense, net, decreased $3.0 million compared to the first quarter of 2020, due to a decline in interest rates in the current period over the first quarter of 2020, as the weighted average interest rate incurred on outstanding borrowings under the Company's credit facility was less than 2% during the first quarter of 2021 compared to approximately 3% during the first quarter of 2020.

The Company's effective tax rates for the first quarters of 2021 and 2020 were an expense of 24.2% and a benefit of 31.1%, respectively. The Company's effective tax rate for the three months ended March 31, 2021 was impacted by the sale of certain held-for-sale real property assets related to the Combination as well as certain U.S. tax law changes. Comparatively, the prior year first quarter effective tax rate was impacted by the tax effect of certain one-time pre-tax losses as well as certain tax charges and benefits in the current period including those related to changes in foreign tax credit valuation allowances, tax law changes in a foreign jurisdiction, and the tax impacts of the Company's termination of its Legacy Quaker U.S. Pension Plan and the Houghton indefinite-lived trademarks and tradename intangible asset impairment. Excluding the impact of these items as well as all other non-core items in each quarter, described in the Non-GAAP Measures section of this Item, above, the Company estimates that its effective tax rates for the first quarter of 2021 and 2020 would have been approximately 25% and 22%, respectively. This quarter-over-quarter increase was largely driven by the impact of higher pre-tax income in the current quarter as compared to the prior year quarter on certain tax adjustments as well as increased withholding taxes on expected current year repatriated earnings. The Company expects continued volatility in its effective tax rates due to several factors, including the timing of tax audits and the expiration of applicable statutes of limitations as they relate to uncertain tax positions, the unpredictability of the timing and amount of certain incentives in various tax jurisdictions, the treatment of certain acquisition-related costs and the timing and amount of certain share-based compensation-related tax benefits, among other factors.

Equity in net income of associated companies increased $4.5 million in the first quarter of 2021 compared to the first quarter of 2020, primarily due to current quarter income from the Company's interest in a captive insurance company compared to losses in the prior year first quarter. See the Non-GAAP Measures section of this Item, above. In addition, the Company had higher earnings quarter-over-quarter from the Company's 50% interest in its joint venture in Korea.

Net income attributable to noncontrolling interest was less than $0.1 million in both the first quarters of 2021 and 2020.

Foreign exchange negatively impacted the Company's first quarter of 2021 results by approximately 1% as higher foreign exchange transaction losses quarter-over-quarter were partially offset by an aggregate positive impact from foreign currency translation on earnings.

Reportable Segments Review - Comparison of the First Quarter of 2021 with the First Quarter of 2020

The Company's reportable segments reflect the structure of the Company's internal organization, the method by which the Company's resources are allocated and the manner by which the chief operating decision maker of the Company assesses its performance. The Company has four reportable segments: (i) Americas; (ii) EMEA; (iii) Asia/Pacific; and (iv) Global Specialty Businesses. The three geographic segments are composed of the net sales and operations in each respective region, excluding net sales and operations managed globally by the Global Specialty Businesses segment, which includes the Company's container, metal finishing, mining, offshore, specialty coatings, specialty grease and Norman Hay businesses.

Segment operating earnings for each of the Company's reportable segments are comprised of net sales less directly related COGS and SG&A. Operating expenses not directly attributable to the net sales of each respective segment, such as certain corporate and administrative costs, Combination, integration and other acquisition-related expenses, and Restructuring and related charges, are not included in segment operating earnings. Other items not specifically identified with the Company's reportable segments include interest expense, net and other income (expense), net.

Americas

Americas represented approximately 31% of the Company's consolidated net sales in the first quarter of 2021. The segment's net sales were $134.9 million, an increase of $5.0 million or 4% compared to the first quarter of 2020. The increase in net sales reflects the inclusion of additional net sales from acquisitions, primarily Coral. Excluding net sales from acquisitions, the segment's net sales were relatively flat compared to the prior year first quarter as the increases from selling price and product mix of 2% were offset by the negative impacts of foreign currency transaction of 2%. The foreign exchange impact was primarily due to the weakening of the Brazilian real against the U.S. dollar, as this exchange rate averaged 5.46 in the first quarter of 2021 compared to 4.43 in the first quarter of 2020. This segment's operating earnings were $32.2 million, an increase of $3.0 million or 10% compared to the first quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with a higher current quarter gross margin, partially offset by slightly higher SG&A, including SG&A from acquisitions.

EMEA

EMEA represented approximately 28% of the Company's consolidated net sales in the first quarter of 2021. The segment's net sales were $119.8 million, an increase of $15.0 million or 14% compared to the first quarter of 2020. The increase in net sales was driven by increases in volumes of 3%, a benefit from selling price and product mix of 2%, additional set sales from acquisitions of less than 1% and a positive impact from foreign currency translation of 8%. The current quarter volume increase was driven by the continued gradual economic rebound from the COVID-19 slowdown. The foreign exchange impact was primarily due to the strengthening of the euro against the U.S. dollar as this exchange rate averaged 1.21 in the first quarter of 2021 compared to 1.10 in the first quarter of 2020. This segment's operating earnings were $25.2 million, an increase of $6.9 million or 38% compared to the first quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with higher current quarter gross margin and relatively flat SG&A.

Asia/Pacific

Asia/Pacific represented approximately 23% of the Company's consolidated net sales in the first quarter of 2021. The segment's net sales were $96.7 million, an increase of $23.2 million or 31% compared to the first quarter of 2020. The increase in net sales reflects increases in volumes of 28% and the positive impact of foreign currency translation of 7% partially offset by decreases in selling price and product mix of 4%. The increases in volume was primarily driven by the continued gradual economic rebound from the COVID-19 slowdown as the pandemic notably impacted China during the first quarter of 2020. The foreign exchange impact was primarily due to the strengthening of the Chinese renminbi against the U.S. dollar as this exchange rate averaged 6.48 in the first quarter of 2021 compared to 6.98 in the first quarter of 2020. This segment's operating earnings were $27.5 million, an increase of $8.0 million or 41% compared to the first quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above on a relatively consistent gross margin quarter-over-quarter. These increases were partially offset by higher SG&A which was driven by the segment's improved operating performance compared to the first quarter of 2020.

Global Specialty Businesses

Global Specialty Businesses represented approximately 18% of the Company's consolidated net sales in the first quarter of 2021. The segment's net sales were $78.4 million, an increase of $8.1 million or 12% compared to the first quarter of 2020. The increase in net sales reflects the inclusion of additional net sales from the Company's Coral Chemical acquisition. Excluding net sales from acquisitions, the segment's net sales would have increased 6% quarter-over-quarter driven by increases in selling price and product mix, including Norman Hay, of approximately 20% and the positive impact from foreign currency translation of 2%, partially offset by decreases in volumes of 16%. The foreign exchange impact was primarily due to the strengthening of the euro against the U.S. dollar described in the EMEA section above, partially offset by the weakening of the Brazilian real against the U.S. dollar described in the Americas section, above. Both the changes in selling price and product mix and sales volume were primarily driven by higher shipments of a lower priced product in the Company's mining business in the prior year, without the impact of this mining business item, this segment's volumes would have been relatively consistent quarter-over-quarter. This segment's operating earnings were $24.2 million, an increase of $3.6 million or 18% compared to the first quarter of 2020. The increase in segment operating earnings reflects the higher net sales described above coupled with higher current quarter gross margin and relatively flat SG&A.

Factors That May Affect Our Future Results

(Cautionary Statements Under the Private Securities Litigation Reform Act of 1995)

Certain information included in this Report and other materials filed or to be filed by Quaker Chemical Corporation with the Securities and Exchange Commission ("SEC") (as well as information included in oral statements or other written statements made or to be made by us) contain or may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements can be identified by the fact that they do not relate strictly to historical or current facts. We have based these forward-looking statements, including statements regarding the potential effects of the COVID-19 pandemic on the Company's business, results of operations, and financial condition, our expectation that we will maintain sufficient liquidity and remediate any of our material weaknesses in internal control over financial reporting on our current expectations about future events, and statements regarding the impact of increased raw material costs and pricing initiatives.

These forward-looking statements include statements with respect to our beliefs, plans, objectives, goals, expectations, anticipations, intentions, financial condition, results of operations, future performance, and business, including:

- the potential benefits of the Combination and other acquisitions;
- the impacts on our business as a result of the COVID-19 pandemic and any projected global economic rebound or anticipated positive results due to Company actions taken in response to the pandemic;
- our current and future results and plans; and
- statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan" or similar expressions.

Such statements include information relating to current and future business activities, operational matters, capital spending, and financing sources. From time to time, forward-looking statements are also included in the Company's other periodic reports on Forms 10-K, 10-Q and 8-K, press releases, and other materials released to, or statements made to, the public.

Any or all of the forward-looking statements in this Report, in the Company's Annual Report to Shareholders for 2020 and in any other public statements we make may turn out to be wrong. This can occur as a result of inaccurate assumptions or as a consequence of known or unknown risks and uncertainties. Many factors discussed in this Report will be important in determining our future performance. Consequently, actual results may differ materially from those that might be anticipated from our forward-looking statements.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. However, any further disclosures made on related subjects in the Company's subsequent reports on Forms 10-K, 10-Q, 8-K and other related filings should be consulted. A major risk is that demand for the Company's products and services is largely derived from the demand for our customers' products, which subjects the Company to uncertainties related to downturns in a customer's business and unanticipated customer production shutdowns, including as is currently being experienced by many automotive industry companies. Other major risks and uncertainties include, but are not limited to, the primary and secondary impacts of the COVID-19 pandemic, including actions taken in response to the pandemic by various governments, which could exacerbate some or all of the other risks and uncertainties faced by the Company, including the potential for significant increases in raw material costs, supply chain disruptions, customer financial instability, worldwide economic and political disruptions, foreign currency fluctuations, significant changes in applicable tax rates and regulations, future terrorist attacks and other acts of violence. Furthermore, the Company is subject to the same business cycles as those experienced by our customers in the steel, automobile, aircraft, industrial equipment, and durable goods industries. The ultimate impact of COVID-19 on our business will depend on, among other things, the extent and duration of the pandemic, the severity of the disease and the number of people infected with the virus, the continued uncertainty regarding global availability, administration, acceptance and long-term efficacy of vaccines, or other treatments for COVID-19 or its variants, the longer-term effects on the economy by the pandemic, including the resulting market volatility, and by the measures taken by governmental authorities and other third parties restricting day-to-day life and business operations and the length of time that such measures remain in place, as well as laws and other governmental programs implemented to address the pandemic or assist impacted businesses, such as fiscal stimulus and other legislation designed to deliver monetary aid and other relief. Other factors could also adversely affect us, including those related to the Combination and other acquisitions and the integration of acquired businesses. Our forward-looking statements are subject to risks, uncertainties and assumptions about the Company and its operations that are subject to change based on various important factors, some of which are beyond our control. These risks, uncertainties, and possible inaccurate assumptions relevant to our business could cause our actual results to differ materially from expected and historical results.

Therefore, we caution you not to place undue reliance on our forward-looking statements. For more information regarding these risks and uncertainties as well as certain additional risks that we face, refer to the Risk Factors section, which appears in Item 1A in our 2020 Form 10-K and in our quarterly and other reports filed from time to time with the SEC. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

Quaker Houghton on the Internet

Financial results, news and other information about Quaker Houghton can be accessed from the Company's website at https://www.quakerhoughton.com. This site includes important information on the Company's locations, products and services, financial reports, news releases and career opportunities. The Company's periodic and current reports on Forms 10-K, 10-Q, 8-K, and other filings, including exhibits and supplemental schedules filed therewith, and amendments to those reports, filed with the SEC are available on the Company's website, free of charge, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. Information contained on, or that may be accessed through, the Company's website is not incorporated by reference in this Report and, accordingly, you should not consider that information part of this Report.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We have evaluated the information required under this Item that was disclosed in Part II, Item 7A, of our Annual Report on Form 10-K for the year ended December 31, 2020, and we believe there has been no material change to that information.

Item 4. Controls and Procedures.

Evaluation of disclosure controls and procedures. As required by Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), our management, including our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this Report. Based on that evaluation, our principal executive officer and our principal financial officer have concluded that, as of the end of the period covered by this Report, our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) were not effective as of March 31, 2021 because of the material weaknesses in our internal control over financial reporting, as described below.

As previously disclosed in "Item 9A. Controls and Procedures." in the Company's 2020 Form 10-K, through the process of evaluating risks and corresponding changes to the design of existing or the implementation of new controls in light of the significant non-recurring transactions that occurred during 2019, including the Combination, the Company identified certain deficiencies in its application of the principles associated with the Committee of Sponsoring Organization of the Treadway Commission in Internal Control – Integrated Framework (2013) that management has concluded in the aggregate constitute a material weakness. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of annual or interim financial statements will not be prevented or detected on a timely basis. We did not design and maintain effective controls in response to the risks of material misstatement. Specifically, changes to existing controls or the implementation of new controls were not sufficient to respond to changes to the risks of material misstatement in financial reporting as a result of becoming a larger, more complex global organization due to the Combination. This material weakness also contributed to an additional material weakness as we did not design and maintain effective controls over the review of pricing, quantity and customer data to verify that revenue recognized was complete and accurate. These material weaknesses did not result in material misstatements to the interim or annual consolidated financial statements. However, these material weaknesses could result in misstatements to our account balances and disclosures that could result in a material misstatement to the interim or annual consolidated financial statements that would not be prevented or detected.

Notwithstanding these material weaknesses, the Company has concluded that the unaudited condensed consolidated financial statements included in this Report present fairly, in all material respects, the financial position of the Company as of March 31, 2021 and December 31, 2020, and that the results of its operations and its cash flows and changes in equity for both the three month periods ended March 31, 2021 and March 31, 2020, are in conformity with accounting principles generally accepted in the United States of America.

Progress on Remediation of Material Weaknesses

The Company and its Board of Directors, including the Audit Committee of the Board of Directors, are committed to maintaining a strong internal control environment. Since identifying the material weaknesses, the Company has dedicated a significant amount of time and resources to remediate all of the previously identified material weaknesses as quickly and effectively as possible. In 2020, the Company dedicated multiple internal resources and supplemented those internal resources with various third-party specialists to assist with the formalization of a robust and detailed remediation plan. In undertaking remediation activities, the Company has hired additional personnel dedicated to financial and information technology compliance to further supplement its internal resources. In addition, the Company has established a global network of personnel to assist local management in understanding control performance and documentation requirements. In order to sustain this network, the Company conducts periodic trainings and hosts discussions to address questions on a current basis. However, the impact of COVID-19, including travel restrictions and remote work arrangements required the Company to adapt and make changes to its internal controls integration plans as well as its remediation plans, and has presented and is expected to continue to present challenges with regards to the timing of the Company's remediation and integration plan activities.

Despite the challenges brought on by COVID-19 and driven by the Company's priority of creating a long-term sustainable control structure to ensure stability for a company that has more than doubled in size since August 2019, the Company continues to make substantial strides towards remediating the underlying causes of the previously disclosed material weaknesses in our risk assessment process and within our revenue process, as further discussed below.

Risk Assessment – We previously determined that our risk assessment process was not designed adequately to respond to changes to the risks of material misstatement to financial reporting. In order to remediate this material weakness, we have designed and implemented an improved risk assessment process, including identifying and assessing those risks attendant to the significant changes within the Company as a result of becoming a larger, more complex global organization due to the Combination. During 2020, a full review was performed of our processes and controls across significant locations in order to identify and address potential design gaps. In addition to individual transactional-level control enhancements, this review resulted in (i) an enhanced financial statement risk assessment, (ii) the standardization of existing legal entity and newly implemented segment quarterly analytics and quarterly closing packages completed by key financial reporting personnel, (iii) a global account reconciliation review program and (iv) enhancements to our quarterly identification and reassessment of new and existing business and information technology risks that could affect our financial reporting. Monitoring is also performed through our enhanced quarterly controls certification process, whereby changes in business or information technology processes or control owners are identified and addressed timely. Although we have implemented and tested the additional controls as noted in our remediation plan and found them to be effective, this material weakness will not be considered remediated due to the Revenue – Price and Quantity material weakness, discussed below. Once the Revenue – Price and Quantity material weakness is remediated, we expect the Risk Assessment material weakness will also be remediated.

Revenue – Price and Quantity – We previously determined that we did not design and maintain effective controls over the review of pricing, quantity and customer data to verify that revenue recognized was complete and accurate. In order to remediate this material weakness, the Company made significant progress in its redesign of certain aspects of its revenue process and related controls. The Company has identified and agreed upon design enhancements and requirements for each revenue sub-process. The design includes enhancements to entity-level and transactional-level manual controls as well as IT general and application controls and the Company is in the process of implementing these design changes both centrally and locally. However, because the additional controls have not been fully implemented and tested, this material weakness is not yet remediated. This existing material weakness will not be considered remediated until the applicable remedial controls have been fully implemented and operate for a sufficient period of time and management has concluded, through testing, that the controls are operating effectively.

Given the significant resources the Company has dedicated to remediation of its material weaknesses, the Company is committed to remediation and expects that in 2021 it will successfully implement the enhanced design of its revenue processes and have a sufficient operational effectiveness period to evidence remediation over its price and quantity material weakness and, concurrently, evidence remediation over its risk assessment material weakness in 2021 as well.

Changes in internal control over financial reporting. As required by Rule 13a-15(d) under the Exchange Act, our management, including our principal executive officer and principal financial officer, has evaluated our internal control over financial reporting to determine whether any changes to our internal control over financial reporting occurred during the quarter ended March 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, there were no changes that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the quarter ended March 31, 2021.

PART II.
OTHER INFORMATION

Items 3, 4 and 5 of Part II are inapplicable and have been omitted.

Item 1. Legal Proceedings.

Incorporated by reference is the information in Note 19 of the Notes to the Condensed Consolidated Financial Statements in Part I, Item 1, of this Report.

Item 1A. Risk Factors.

In addition to the other information set forth in this Report, you should carefully consider the risk factors previously disclosed in Part I, Item 1A of our 2020 Form 10-K, which includes the on-going risk and uncertainty related to the outbreak of COVID-19 and its impact on business and economic conditions. The risks associated with COVID-19 and the other risks described in our 2020 Form 10-K are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially and adversely affect our business, financial condition or operating results.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

The following table sets forth information concerning shares of the Company's common stock acquired by the Company during the period covered by this Report:

Period	(a) Total Number of Shares Purchased (1)	(b) Average Price Paid Per Share (2)	(c) Total Number of Shares Purchased as part of Publicly Announced Plans or Programs	(d) Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs (3)
January 1 - January 31	**—**	**$ —**	**—**	**$ 86,865,026**
February 1 - February 28	**4,595**	**$ 284.56**	**—**	**$ 86,865,026**
March 1 - March 31	**45**	**$ 240.55**	**—**	**$ 86,865,026**
Total	**4,640**	**$ 284.14**	**—**	**$ 86,865,026**

(1) All of these shares were acquired from employees upon their surrender of Quaker Chemical Corporation shares in payment of the exercise price of employee stock options exercised or for the payment of taxes upon exercise of employee stock options or the vesting of restricted stock.

(2) The price paid for shares acquired from employees pursuant to employee benefit and share-based compensation plans is, in each case, based on the closing price of the Company's common stock on the date of exercise or vesting as specified by the plan pursuant to which the applicable option or restricted stock was granted.

(3) On May 6, 2015, the Board of Directors of the Company approved, and the Company announced, a share repurchase program, pursuant to which the Company is authorized to repurchase up to $100,000,000 of Quaker Chemical Corporation common stock (the "2015 Share Repurchase Program"), and it has no expiration date. There were no shares acquired by the Company pursuant to the 2015 Share Repurchase Program during the quarter ended March 31, 2021.

Limitation on the Payment of Dividends

The New Credit Facility has certain limitations on the payment of dividends and other so-called restricted payments. See Note 15 of Notes to Condensed Consolidated Financial Statements, in Part I, Item 1, of this Report.

Item 6. Exhibits.

(a) Exhibits

3.1	–	Amended and Restated Articles of Incorporation (as amended through July 24, 2019). Incorporated by reference to Exhibit 3.1 as filed by the Registrant with its quarterly report on Form 10-Q filed on August 1, 2019.
3.2	–	Restated By-laws (effective May 6, 2015, as amended through March 27, 2020). Incorporated by reference to Exhibit 3.2 as filed by the Registrant within its quarterly report on Form 10-Q filed on May 11, 2020.
10.1	–	Memorandum of Employment by and between the Registrant and Shane Hostetter dated and effective April 19, 2021. *†
10.2	–	Form of Change of Control Agreement by and between the Registrant and certain executive officers (including Robert Traub, Jeewat Bijlani, Kym Johnson, David Slinkman and Shane Hostetter). Incorporated by reference to Exhibit 10.4 as filed by the Registrant with Form 10-Q, filed on November 12, 2019. †
10.3	–	Memorandum of Employment by and between the Registrant and David Will dated March 22, 2021 and effective April 19, 2021. *†
10.4	–	Chief Executive Officer Transition Agreement dated April 22, 2021 effective December 31, 2021. *†
31.1	–	Certification of Chief Executive Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.*
31.2	–	Certification of Chief Financial Officer of the Company pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.*
32.1	–	Certification of Chief Executive Officer of the Company Pursuant to 18 U.S. C. Section 1350.**
32.2	–	Certification of Chief Financial Officer of the Company Pursuant to 18 U.S. C. Section 1350.**
101.INS	–	Inline XBRL Instance Document*
101.SCH	–	Inline XBRL Taxonomy Extension Schema Document*
101.CAL	–	Inline XBRL Taxonomy Calculation Linkbase Document*
101.DEF	–	Inline XBRL Taxonomy Definition Linkbase Document*
101.LAB	–	Inline XBRL Taxonomy Label Linkbase Document*
101.PRE	_	Inline XBRL Taxonomy Presentation Linkbase Document*
104	–	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101.INS)*

* Filed herewith.
** Furnished herewith.
† Management contract or compensatory plan.

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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 thereunto duly authorized.

QUAKER CHEMICAL CORPORATION
(Registrant)

/s/ Shane W. Hostetter

Date: May 6, 2021

Shane W. Hostetter, Senior Vice President, Chief Financial Officer (officer duly authorized on behalf of, and principal financial officer of, the Registrant)

EXHIBIT 10.1

MEMORANDUM OF EMPLOYMENT

April 19, 2021

Shane W. Hostetter
[Redacted]

The parties to this Memorandum of Employment (“Agreement”) are **Shane W. Hostetter** and **Quaker Chemical Corporation**, a Pennsylvania corporation, doing business as Quaker Houghton (“Quaker Houghton” or the “Company”).

You are appointed Quaker Houghton’s Senior Vice President and Chief Financial Officer effective as of the date listed above and Quaker Houghton wishes to enter into this Agreement containing certain covenants in connection with this appointment.

NOW THEREFORE in consideration of the mutual promises and covenants herein contained and intending to be legally bound hereby the parties hereto agree as follows:

1. Duties

Quaker Houghton agrees to employ you and you agree to serve as Quaker Houghton’s Senior Vice President and Chief Financial Officer, located at our Conshohocken, PA facility. You shall perform all duties consistent with such position as well as any other duties that are assigned to you from time to time by Quaker Houghton’s Chief Executive Officer. You agree that during the term of your employment with Quaker Houghton to devote your knowledge, skill, and working time solely and exclusively to the business and interests of Quaker Houghton and its subsidiaries. Any and all prior employment or other agreements, with the exception of the April 19, 2021 Change of Control agreement, are hereby terminated and have no further legal effect.

2. Compensation

Your base salary will be determined from time to time by the Compensation and Human Resources Committee of the Board of Directors in consultation with the Chief Executive Officer. In addition, you will be entitled to participate, to the extent eligible, in any of Quaker Houghton’s annual and long term incentive plans, retirement savings plan (401k plan), and will be entitled to paid time off, paid holidays, and medical, dental, and other benefits as are made generally available by Quaker Houghton to its full-time U.S. employees.

3. Term of Employment

Your employment with Quaker Houghton may be terminated on thirty (30) days' written notice by either party, with or without cause or reason whatsoever. Within thirty (30) days after termination of your employment, you will be given an accounting of all monies due you. Notwithstanding the foregoing, Quaker Houghton has the right to terminate your employment upon less than thirty (30) days’ notice for Cause (as defined below).

4. Covenant Not to Disclose

a. You acknowledge that the identity of Quaker Houghton's (and any of Quaker Houghton's affiliates’) customers, the requirements of such customers, pricing and payment terms quoted and charged to such customers, the identity of Quaker Houghton's suppliers and terms of supply (and the suppliers and related terms of supply of any of Quaker Houghton's customers for which management services are being provided), information concerning the method and conduct of Quaker Houghton's (and any affiliate’s) business such as formulae, formulation information, application technology, manufacturing information, marketing information, strategic and marketing plans, financial information, financial statements (audited and unaudited), budgets, corporate practices and procedures, research and development efforts, and laboratory test methods and all of Quaker Houghton's (and its affiliates’) manuals, documents, notes, letters, records, and computer programs are Quaker Houghton's confidential information ("Confidential Information") and are Quaker Houghton’s (and/or any of its affiliates’, as the case may be) sole and exclusive property. You agree that at no time during or following your employment with Quaker Houghton will you appropriate for your own use, divulge or pass on, directly or through any other individual or entity or to any third party, any Quaker Houghton Confidential Information. Upon termination of your employment with Quaker Houghton and prior to final payment of all monies due to you under Section 2 or at any other time upon Quaker Houghton's request, you agree to surrender immediately to Quaker Houghton any and all materials in your possession or control which include or contain any Quaker Houghton Confidential Information.

b. You acknowledge that, by this Section 4(b), you have been notified in accordance with the Defend Trade Secrets Act that, notwithstanding the foregoing:

(i) You will not be held criminally or civilly liable under any federal or state trade secret law or this Agreement for the disclosure of Confidential Information that: (A) you make (1) in confidence to a federal, state, or local government official, either directly or indirectly, or to your attorney; and (2) solely for the purpose of reporting or investigating a suspected violation of law; or (B) you make in a complaint or other document that is filed under seal in a lawsuit or other proceeding.

(ii) If you file a lawsuit for retaliation by Quaker Houghton for reporting a suspected violation of law, you may disclose Confidential Information to your attorney and use the Confidential Information in the court proceeding if you: (A) file any document containing Confidential Information under seal and (B) do not disclose Confidential Information, except pursuant to court order.

c. Additionally, Quaker Houghton confirms that nothing in this Agreement is intended to or shall prevent, impede or interfere with your right, without prior notice to Quaker Houghton, to provide information to the government, participate in any government investigations, file a court or administrative complaint, testify in proceedings regarding Quaker Houghton's past or future conduct, or engage in any future activities protected under any statute administered by any government agency.

5. Covenant Not to Compete

In consideration of your new position with Quaker Houghton and the training and Confidential Information you are to receive from Quaker Houghton, you agree that during your employment with Quaker Houghton and for a period of one (1) year thereafter, regardless of the reason for your termination, you will not:

a. directly or indirectly, together or separately or with any third party, whether as an employee, individual proprietor, partner, stockholder, officer, director, or investor, or in a joint venture or any other capacity whatsoever, actively engage in business or assist anyone or any firm in business as a manufacturer, seller, or distributor of specialty chemical products which are the same, like, similar to, or which compete with Quaker Houghton's (or any of its affiliates') products or services; and

b. directly or indirectly recruit, solicit or encourage any Quaker Houghton (or any of its affiliates') employee or otherwise induce such employee to leave Quaker Houghton's (or any of its affiliates') employ, or to become an employee or otherwise be associated with you or any firm, corporation, business, or other entity with which you are or may become associated; and

solicit or induce any of Quaker Houghton's suppliers of products and/or services (or a supplier of products and/or services of a customer who is being provided or solicited for the provision of chemical management services by Quaker Houghton) to terminate or alter its contractual relationship with Quaker Houghton (and/or any such customer).

The parties consider these restrictions reasonable, including the period of time during which the restrictions are effective. However, if any restriction or the period of time specified should be found to be unreasonable in any court proceeding, then such restriction shall be modified or the period of time shall be shortened as is found to be reasonable so that the foregoing covenant not to compete may be enforced. You agree that in the event of a breach or threatened breach by you of the provisions of the restrictive covenants contained in Section 4 or in this Section 5, Quaker Houghton will suffer irreparable harm, and monetary damages may not be an adequate remedy. Therefore, if any breach occurs, or is threatened, in addition to all other remedies available to Quaker Houghton, at law or in equity, Quaker Houghton shall be entitled as a matter of right to specific performance of the covenants contained herein by way of temporary or permanent injunctive relief. In the event of any breach of the restrictive covenant contained in this Section 5, the term of the restrictive covenant shall be extended by a period of time equal to that period beginning on the date such violation commenced and ending when the activities constituting such violation cease.

6. Contractual Restrictions

You represent and warrant to Quaker Houghton that: (a) there are no restrictions, agreements, or understandings to which you are a party that would prevent or make unlawful your employment with Quaker Houghton and (b) your employment by Quaker Houghton shall not constitute a breach of any contract, agreement, or understanding, oral or written, to which you are a party or by which you are bound. You further represent that you will not use any trade secret, proprietary or otherwise confidential information belonging to a prior employer or other third party in connection with your employment with Quaker Houghton.

7. Inventions

All improvements, modifications, formulations, processes, discoveries or inventions ("Inventions"), whether or not patentable, which were originated, conceived or developed by you solely or jointly with others (a) during your working hours or at Quaker Houghton's expense or at Quaker Houghton's premises or at a customer's premises or (b) during your employment with Quaker Houghton and additionally for a period of one year thereafter, and which relate to (i) Quaker Houghton's business, or (ii) any research, products, processes, devices, or machines under actual or anticipated development or investigation by Quaker Houghton at the earlier of (i) that time or (ii) as the date of termination of employment, shall be Quaker Houghton's sole property. You shall promptly disclose to Quaker Houghton all Inventions that you conceive or become aware of at any time during your employment with Quaker Houghton and shall keep complete, accurate, and authentic notes, data and records of all Inventions and of all work done by you solely or jointly with others, in the manner directed by Quaker Houghton. You hereby transfer and assign to Quaker Houghton all of your right, title and interest in and to any and all Inventions which may be conceived or developed by you solely or jointly with others during your employment with Quaker Houghton. You shall assist Quaker Houghton in applying, obtaining, and enforcing any United States Letters Patent and Foreign Letters Patent on any such Inventions and to take such other actions as may be necessary or desirable to protect Quaker Houghton's interests therein. Upon request, you shall execute any and all applications, assignments, or other documents that Quaker Houghton deems necessary and desirable for such purposes. You have attached hereto a list of unpatented inventions that you have made or conceived prior to your employment with Quaker Houghton, and it is agreed that those inventions shall be excluded from the terms of this Agreement.

8. Termination

Quaker Houghton, in its sole discretion, may terminate your employment at any time and for any reason, including Cause (as defined herein). If you incur a Separation from Service by decision and action of Quaker Houghton for any reason other than Cause, death, or Disability (as defined below), Quaker Houghton agrees to:

a. Provide you with reasonable outplacement assistance, either by providing the services in-kind, or by reimbursing reasonable expenses actually incurred by you in connection with your Separation from Service. The outplacement services must be provided during the one-year period following your Separation from Service. If any expenses are to be reimbursed, you must request the reimbursement within eighteen months of your Separation from Service and reimbursement will be made within 30 days of your request.

b. Pay you one year's severance in twenty-four semi-monthly installments commencing on the Payment Date and continuing on Quaker Houghton's normal semi-monthly payroll dates each month thereafter, each of which is equal to your semi-monthly base salary at the time of your Separation from Service, provided you sign a Release within 45 days of the later of the date you receive the Release or your Separation from Service. Continuation of medical and dental coverage's will be consistent with current Quaker Houghton severance program in place at the time of termination.

"Separation from Service" means your separation from service with Quaker Houghton and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

"Cause" means your employment with Quaker Houghton has been terminated by reason of (i) your willful and material breach of this Agreement (after having received notice thereof and a reasonable opportunity to cure or correct) or the Company's policies, (ii) dishonesty, fraud, willful malfeasance, gross negligence, or other gross misconduct, in each case relating to the performance of your duties hereunder which is materially injurious to Quaker Houghton, or (iii) conviction of or plea of guilty or nolo contendere to a felony.

"Payment Date" means (x) the 60th day after your Separation from Service or (y) if you are a specified employee (as defined in Treas. Reg. §1.409A-1(i)) as of the date of your Separation from Service, and the severance described in subsection (b) is deferred compensation subject to section 409A of the Code, the first business day of the seventh month following the month in which your Separation from Service occurs. If the Payment Date is described in clause (y), the amount paid on the Payment Date shall include all monthly installments that would have been paid earlier had clause (y) not been applicable, plus interest at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of your Separation from Service (or the previous business day if such day is not a business day), for the period from the date payment would have been made had clause (y) not been applicable through the date payment is made.

"Release" means a release (in a form satisfactory to Quaker Houghton) of any and all claims against Quaker Houghton and all related parties with respect to all matters arising out of your employment with Quaker Houghton, or the termination thereof (other than for claims for any entitlements under the terms of this Agreement or any plans or programs of Quaker Houghton under which you have accrued a benefit) that Quaker Houghton provides to you no later than ten days after your Separation from Service. If a release is not provided to you within this time period, the severance shall be paid even if you do not sign a release.

"Disability" means total and permanent disability as defined in the long-term disability plan maintained by Quaker Houghton for employees generally or, if Quaker Houghton does not maintain such a plan, the long-term disability plan most recently maintained by Quaker Houghton for employees generally.

9. Indemnification.

The Company shall defend you and hold you harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by you of services for, or action of you, as a director, officer or employee of the Company or any parent, subsidiary or affiliate of the Company, or of any other person or enterprise at the Company's request. Expenses incurred by you in defending such claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of you to repay said amount unless it shall ultimately be determined that you are entitled to be indemnified hereunder; provided, however, that this shall not apply to a nonderivative action commenced by the Company against you.

10. Governing Law.

The provisions of this Agreement shall be construed in accordance with the laws of the Commonwealth of Pennsylvania without reference to principles of conflicts of laws.

11. Miscellaneous

This Agreement and any Change in Control Agreement to which you are a party, constitute the entire integrated agreement concerning the subjects covered herein. In case any provision of this Agreement shall be invalid, illegal, or otherwise unenforceable, the validity, legality, and enforceability of the remaining provisions shall not thereby be affected or impaired. You may not assign any of your rights or obligations under this Agreement without Quaker Houghton's prior written consent. Quaker Houghton may assign this Agreement in its discretion, including to any affiliate or upon a sale of assets or equity, merger or other corporate transaction, provided that Quaker Houghton obtains the assignee's written commitment to honor the terms and conditions contained herein. This Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Pennsylvania without regard to any conflict of laws. This Agreement shall be binding upon you, your heirs, executors, and administrators and shall inure to the benefit of Quaker Houghton as well as its successors and assigns. In the event of any overlap in the restrictions contained herein, including Sections 4 and/or 5 above, with similar restrictions contained in any other agreement, such restrictions shall be read together so as to provide the broadest restriction possible.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

WITNESS:

/s/ Robert T. Traub

QUAKER CHEMICAL CORPORATION DBA QUAKER HOUGHTON

/s/ Michael F. Barry

Michael F. Barry

WITNESS:

/s/ Victoria K. Gehris

/s/ Shane W. Hostetter

Shane W. Hostetter

Shane W. Hostetter
ADDENDUM 1

Base Salary: Your salary will be payable on a bi-weekly basis at an annualized rate of $390,000. You will be eligible for your next salary increase in 2022.

Annual and Long-Term Bonuses: For your position, you are eligible to participate in the Annual Incentive Plan ("AIP") with target and double target award percentages for 2021 under the AIP of 60% and 120%, respectively, of your base salary, dependent upon Quaker Houghton's financial results and other objectives to be determined.

You were eligible to participate in the 2021-2023 Long Term Incentive Plan (LTIP) at a target level award of $103,000. In consideration of accepting your new role, you award will be increased by $200,000 for a total target level award opportunity of $303,000. Your award for the 2021-2023 performance period includes an even mix of time-based restricted stock, stock options, and target performance stock units.

All incentive compensation awards are made at the Company's discretion, are subject to change, and require the approval of the Compensation Committee.

Benefits: Quaker Houghton offers a Flexible Benefits Program that is subject to change. This gives you the opportunity to choose from a variety of options creating a customized benefits package. The following benefits are currently part of the program. In each of these areas, you are offered a range of options so you may choose the ones that make the most sense for your personal situation.

- Medical
- Dental
- Life & AD&D Insurance
- Long-term Disability
- Health Care and Dependent Care Flexible Spending Accounts (FSAs)
- Retirement Savings Plan (401k)

PTO/Holidays: You will be eligible for the amount of PTO days per calendar year based on your tenure with Quaker Houghton per the Company's PTO Plan. In addition, you will continue to be eligible to be paid for regional holidays. Unused PTO days will not roll over from year to year (other than a maximum of 5 days in 2021 as previously announced by the Company).

EXHIBIT 10.3

March 22, 2021

David Will
Quaker Houghton

Dear David:

Congratulations! I am pleased to offer you this promotion with Quaker Houghton as VP, Global Controller. Your tentative start date for this position is April 19, 2021. We believe you can make significant contributions in this role and will find this opportunity exciting and rewarding. Please review the details of the offer below.

Salary
Your new annualized salary is $260,000 and is inclusive of your 2020 merit increase and is effective on April 19, 2021. You will be eligible for your next merit increase in April 2022, reflective of performance year 2021.

Annual Incentive Plan
You will be eligible to participate in our 2021 Annual Incentive Plan (AIP), with an annual bonus target of 30% of your base salary.

Long Term Incentive Plan
You will be eligible to participate in our 2021 Long Term Incentive Plan (LTIP) at a level valued at $70,000 which is inclusive of the $47,000 grant you received on March 15th. The $23,000 value in the difference will be reflected in an additional grant on your start date of April 19, 2021. As a reminder, the grant will consist of Restricted Stock (60%) and Performance Stock Units (40%).

The terms and conditions of your employment as they existed remain in effect, except as specifically set forth above and in restrictions from what you signed previously. Quaker Houghton reserves the right to modify your job title, duties and compensation, as well as all company rules, practices and other terms of employment.

We are excited about this opportunity for you David and look forward to you accepting this role with Quaker Houghton. After your review of this offer, please sign below to confirm your acceptance and return to me with a copy to Rob Traub and Kym Johnson.

Sincerely,

/s/ Shane Hostetter
Shane Hostetter
VP, Finance and Chief Accounting Officer

Employee Offer Acceptance
I accept the terms and conditions outlined above:

/s/ David Will 4/7/2021
David Will Date

EXHIBIT 10.4

TRANSITION AGREEMENT

This Transition Agreement (this “**Agreement**”), dated as of April 22, 2021 is made between Michael Barry (“**Executive**”) and Quaker Chemical Corporation (“**Quaker**” or the “**Company**”).

WHEREAS, Executive and Quaker are parties to the Employment Agreement dated July 1, 2008 regarding Executive’s employment as the Company’s Chief Executive Officer and President (the “**Employment Agreement**”);

WHEREAS, Executive and Quaker contemplate that effective December 31, 2021, Executive will retire as the Chief Executive Officer and President and will continue to serve on the Board of Directors of the Company (the “**Board**”) as a non-executive director;

WHEREAS, as used in this Agreement, any reference to Executive shall include Executive and, in their capacities as such, Executive’s heirs, administrators, representatives, executors, legatees, successors, agents and assigns; and

WHEREAS, all capitalized terms used but not defined in this Agreement shall have the meanings ascribed to such terms in the Employment Agreement;

In consideration of the mutual promises, agreements and representations contained herein, the parties agree as follows:

1. **Transition.** Executive shall continue to serve as President and Chief Executive Officer of the Company, at his current level of compensation (including the full amount of his Annual Incentive Plan (“**AIP**”) bonus earned with respect to calendar year 2021) and benefits (with such increases as may be approved by the Board) through December 31, 2021. Effective January 1, 2022, Executive shall resign as an employee of the Company, and from such positions and from all positions as an officer or director of any Company subsidiary (but, for the sake of clarity, he shall not be expected to resign as a director of the Company). However, with the approval of the Board, Executive may resign from such positions prior to January 1, 2022, and in that event may also, if he desires, resign as an employee prior to January 1, 2022. In either event, Executive shall make himself reasonably available to the Board to provide strategic advice and counsel through December 31, 2021 and shall continue to receive, through December 31, 2021 the same level of compensation and benefits to which he was entitled as of the date of his resignation as President and Chief Executive Officer (including the full amount of his AIP bonus earned with respect to calendar year 2021). If the Board requests and Executive provides his written consent, Executive’s employment may be extended beyond December 31, 2021 at his current level of compensation and benefits, or upon such other terms and conditions that the Board and Executive may mutually agree. The date of Executive’s resignation as President and Chief Executive Officer of the Company is referred to in the Agreement as the “**Resignation Date**.” Following his resignation as President and Chief Executive Officer, Executive shall, subject to further action by the Board, continue to serve as Chair of the Board, in the capacity as non-executive Chair.
2. **Compensation.** If the Resignation Date occurs before January 1, 2022, the Company shall compensate Executive through December 31, 2021 as provided in Section 1 above. From and after January 1, 2022 and continuing for as long as Executive serves as a director, the Company shall compensate Executive for his services as a director on the same basis as it compensates the non-management members of the Board and shall pay him additional compensation of $100,000 per annum (or such greater amount as may be approved by the Board) for his services as non-executive Chair. Such compensation shall be paid on the same basis as the compensation payable to the Lead Director (if there is one, otherwise on the same basis as for those directors serving as chairs of Board committees), pro-rated in the event of a partial year; provided that Executive’s compensation for serving as non-executive Chair shall, if paid in cash, shall be paid in monthly installments. The Company shall reimburse Executive for all reasonable business expenses incurred by him in the performance of duties as a director and non-executive Chair in accordance with the Company’s business expense reimbursement policies. While serving as non-executive Chair, the Company shall provide Executive with support services as Executive may reasonably request, including computer and telephone access, IT support and support from an administrative assistant.

3. **Non-Executive Chair of the Board.** As the non-executive Chair, it is contemplated that Executive shall, when present, preside at all meetings of the Board and at all meetings of shareholders of the Company, and together with the President and Chief Executive Officer and (if there is one) the Lead Director, set the agenda for meetings of the Board. In addition, Executive shall, upon request, provide his advice and counsel with respect to the transition of management, new business opportunities, strategic planning, customer and investor relations and such other matters as the Company’s Chief Executive Officer or the Board may reasonably request.

4. **No Termination of Service.** Executive and the Company hereby acknowledge that the Compensation and Human Resources Committee of the Board (or such other committee described in the LTIP) has provided that Executive will not be considered to have had a “**Termination of Service**” as defined in the LTIP for so long as Executive is a director or employee of the Company.

Any further amendment to the interpretation of Termination of Service will be considered an amendment to an outstanding award pursuant to section 2.6 of the LTIP and may only be made with the Executive's consent.

5. **Company's Obligations**

   a. The Company will pay Executive for any amounts of Executive's accrued salary payable under the Employment Agreement and reimbursement for any reasonable business expenses and other amounts to which Executive is entitled thereunder. Such payment will be made in accordance with the Company's regular payroll practices.

   b. Executive shall receive any incentive cash bonus amount accrued or earned by Executive in accordance with the terms of an award granted under the AIP or LTIP prior January 1, 2022 in accordance with the terms of the AIP or LTIP, as applicable. Any such amount shall be paid to Executive as provided under the AIP or LTIP, as applicable.

   c. Following the Resignation Date, Executive shall not be eligible to participate in the Company's benefit plans except as provided below with respect to Executive's participation in the Company's existing medical plan, as such plan may be changed by the Company from time to time for its senior employees generally (“**Medical Coverage**”) and the Company's existing short-term disability plan and long-term disability plan as such plans may be changed by the Company from time to time for its senior employees generally (“**Disability Coverage**”).

      i. Subject to approval from the applicable insurance provider, if any, the Company shall, until April 30, 2023, permit Executive to elect Medical Coverage (including medical, vision and dental coverage) for himself and his family as follows:

         1. Executive shall pay the premium cost of the Medical Coverage he elects at the rate provided to active employees of the Company, and on an after-tax basis. In addition, the Company will pay the portion of the premium cost paid by the Company for active employees for such Medical Coverage and the portion of the premium cost paid by the Company will be includable in Executive's taxable income.

         2. Upon the termination of the Medical Coverage, Executive and if applicable, his family may be eligible to elect COBRA continuation coverage in accordance with the terms of the Medical Coverage and applicable law.

         3. If at any time during such period Executive is not eligible to participate in the Medical Coverage, the Company will pay to Executive additional compensation in an amount necessary to purchase coverage similar to the Medical Coverage.

      ii. For as long as Executive is entitled to elect Medical Coverage from the Company, Executive will continue to be eligible for Disability Coverage under the same terms and conditions as active employees, subject to approval from the applicable insurance provider, if any.

   d. Executive's outstanding equity awards as of December 31, 2021 shall be administered according to the terms of the applicable award agreements (the “**Award Agreements**”) and the terms of the LTIP.

   e. In the event of the death of Executive, any payments due to Executive under this Agreement or the Award Agreements and not paid prior to Executive's death shall be made to the personal representative of Executive's estate.

   f. The Company shall withhold from any payments under this Agreement any federal, state and local taxes that the Company is required to withhold pursuant to any law or governmental rule or regulation. Executive shall be responsible for all Executive taxes applicable to amounts payable under this Agreement.

   g. Executive shall not be entitled to any severance amounts under any severance plans of the Company or the Employment Agreement.

6. **Restrictive Covenants**. Executive shall comply with the Restrictive Covenants set forth in Section 6 of the Employment Agreement (the “**Restrictive Covenants**”) for the applicable periods set forth therein; provided that, notwithstanding anything to the contrary in the Employment Agreement, Executive shall comply with the Restrictive Covenants set forth in Section 6.2 of the Employment Agreement regarding non-competition and non-solicitation for so long as he is a member of the Board, and for a period of 18 months following the end of Executive's Board service.

7. **Return of Property**. Executive agrees to return all Company property to the Company on or before the Resignation Date (other than as relates to his services as a director, including his computer, cellphone and email access) and not retain any property of the

Company (other than his cellphone, computer and any other items that the Company expressly permits Executive to keep). To the extent that Executive retains any such items, or if he made use of his own personal computing devices (e.g., cellphone, laptop, thumb drive, etc.), Executive will, upon request, deliver such items to the Company for review and will permit the Company to delete all Company property and information therefrom, and/or permit the Company to remotely delete all Company property and information from such items. For the avoidance of doubt, notwithstanding anything to the contrary, Executive shall be permitted to retain his contacts (in electronic and paper form). The Company shall pack and ship at its expense the personal items of Executive that are in his office at the Company following the Resignation Date.

8. **Cooperation.** Executive agrees that, upon the Company's reasonable notice to Executive and taking into consideration Executive's other commitments and obligations, Executive shall fully cooperate with the Company in investigating, defending, prosecuting, litigating, filing, initiating or asserting any actual or potential claims or investigations that may be made by or against the Company to the extent that such claims or investigations relate to any matter in which Executive was involved (or alleged to have been involved) while employed with the Company, or during his service as a director, of which Executive has knowledge by virtue of Executive's employment with the Company or Executive's capacity as a director of the Company. The Company will advance to Executive the reasonable out-of-pocket expenses incurred in rendering such cooperation.

9. **Permitted Conduct.** Nothing in this Agreement or the Employment Agreement shall prohibit or restrict Executive from initiating communications directly with, or responding to any inquiry from, or providing testimony before, the Equal Employment Opportunity Commission, the Department of Justice, the Securities and Exchange Commission, or any other federal, state or local regulatory authority. To the extent permitted by law, upon receipt of any subpoena, court order, or other legal process compelling the disclosure of any confidential information and trade secrets of the Company, Executive agrees to give prompt written notice to the Company so as to permit the Company to protect its interests in confidentiality to the fullest extent possible. Please take notice that federal law provides criminal and civil immunity to federal and state claims for trade secret misappropriation to individuals who disclose a trade secret to their attorney, a court, or a government official in certain, confidential circumstances that are set forth at 18 U.S.C. §§ 1833(b)(1) and 1833(b)(2), related to the reporting or investigation of a suspected violation of the law, or in connection with a lawsuit for retaliation for reporting a suspected violation of the law.

10. **Indemnification.** The Company shall defend and hold Executive harmless to the fullest extent permitted by applicable law in connection with any claim, action, suit, investigation or proceeding arising out of or relating to performance by Executive of services for, or action of Executive hereunder or as a director, officer, employee or executive of the Company or of any parent, subsidiary or affiliate of the Company, or of any other person or enterprise at the Company's request. Expenses incurred by Executive in defending such a claim, action, suit or investigation or criminal proceeding shall be paid by the Company in advance of the final disposition thereof upon the receipt by the Company of an undertaking by or on behalf of Executive to repay said amount unless it shall ultimately be determined that Executive is entitled to be indemnified hereunder; provided, however, that this shall not apply to a nonderivative action commenced by the Company against Executive. This indemnification obligation is in addition to the obligations of the Company pursuant to its articles of incorporation and bylaws.

11. **Controlling Law.** This Agreement and all matters arising out of, or relating to it, shall be governed by, and construed in accordance with, the laws of the Commonwealth of Pennsylvania.

12. **Jurisdiction.** Any action arising out of, or relating to, any breach of the Restrictive Covenants shall be brought and prosecuted only in the United States District Court for the Eastern District of Pennsylvania, or if such court does not have jurisdiction or will not accept jurisdiction, in any court of general jurisdiction in Philadelphia, Pennsylvania, and the jurisdiction of such court in any such proceeding shall be exclusive. Executive also irrevocably and unconditionally consents to the service of any process, pleadings, notices or other papers.

13. **Amendment.** The parties agree that this Agreement may not be altered, amended or modified, in any respect, except by a writing duly executed by both Parties.

14. **Entire Agreement.** The parties understand that no promise, inducement or other agreement not expressly contained herein has been made conferring any benefit upon them, and that this Agreement contains the entire agreement between the parties with respect to the subject matter hereof, and that the terms of this Agreement are contractual and not recitals only. Prior to the Resignation Date, the Employment Agreement shall apply to any termination of Executive's employment with the Company, provided, however, that in the event of a Separation from Service prior to the Resignation Date, by action of the Company for any reason other than Cause or the death or Disability of the Executive, Executive shall receive the same compensation and benefits that he would receive in the event of a resignation prior to January 1, 2022, as set forth in Section 1 of this Agreement, in lieu of any payment under Section 4.4 of the Employment Agreement. Following the Resignation Date, the provisions of this Agreement shall govern Executive's service as a director other than those provisions of the Employment Agreement that by their terms apply following termination of Executive's employment as Chief Executive Officer and President of the Company (including without limitation Section 6 and 7.7), which shall continue to apply to Executive.

15. <u>**Section 409A**</u>

a. This Agreement is intended to comply with Code section 409A, or an exemption, and the provisions of this Subsection shall apply notwithstanding any provisions of this Agreement to the contrary. For purposes of section 409A of the Code, the right to a series of payments under this Agreement shall be treated as a right to a series of separate payments and each payment shall be treated as a separate payment. With respect to any payments that are subject to section 409A of the Code, in no event shall Executive, directly or indirectly, designate the calendar year of a payment and if a payment could be made in more than one taxable year, based on timing of the execution of this Agreement, payment shall be made in the later taxable year. Any reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of section 409A of the Code.

b. Notwithstanding any provision of this Agreement to the contrary, any payment or benefit under this Agreement that constitutes deferred compensation subject to section 409A of the Code and for which the payment event is a Separation from Service shall not be made or provided before the date that is six months after the date of Executive's Separation from Service. Any payment or benefit that is delayed pursuant to this Subsection shall be made or provided on the first business day of the seventh month following the month in which Executive's Separation from Service occurs. With respect to any cash payment delayed pursuant to this Subsection, the first payment shall include interest, at the Wall Street Journal Prime Rate published in the Wall Street Journal on the date of Executive's Separation from Service (or the previous business day if such date is not a business day), for the period from the date the payment would have been made but for this Subsection through the date payment is made. The provisions of this Subsection shall apply only to the extent required to avoid Executive's incurrence of any additional tax or interest under section 409A of the Code. For purposes of this Subsection, a "**Separation from Service**" shall mean Executive's separation from service with the Company and its affiliates within the meaning of Treas. Reg. §1.409A-1(h) or any successor thereto.

16. **Agreement Severability**. If any provision of this Agreement is construed to be invalid, unlawful or unenforceable, then the remaining provisions hereof shall not be affected thereby and shall be enforceable without regard thereto.

IN WITNESS WHEREOF, and intending to be legally bound, the parties agree to the terms of this Agreement.

Quaker Chemical Corporation

Date: 4/22/2021

By: /s/ Robert T. Traub
Name: Robert T. Traub
Title: Sr. VP, General Counsel and Corporate Secretary

Date: 4/22/2021

By: /s/ Michael F. Barry
Michael F. Barry

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934

I, Michael F. Barry, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 6, 2021

/s/ Michael F. Barry
Michael F. Barry
Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER OF THE COMPANY PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934

I, Shane Hostetter, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Quaker Chemical Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 6, 2021

/s/ Shane W. Hostetter
Shane W. Hostetter
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the “Company”) for the quarterly period ended March 31, 2021 filed with the Securities and Exchange Commission (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 6, 2021

/s/ Michael F. Barry
Michael F. Barry
Chief Executive Officer of Quaker Chemical Corporation

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350

The undersigned hereby certifies that the Form 10-Q Quarterly Report of Quaker Chemical Corporation (the “Company”) for the quarterly period ended March 31, 2021 filed with the Securities and Exchange Commission (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 6, 2021

/s/ Shane W. Hostetter
Shane W. Hostetter
Chief Financial Officer of Quaker Chemical Corporation