

**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 September 30, 2018

OR

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

Commission file number 001-35416



U.S. Silica Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
Incorporation or Organization)

26-3718801
(I.R.S. Employer
Identification No.)

24275 Katy Freeway, Suite 600
Katy, Texas 77494
(Address of Principal Executive Offices) (Zip Code)
(281) 258-2170
(Registrant's telephone number, including area code)

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

As of October 19, 2018, 77,511,268 shares of common stock, par value \$0.01 per share, of the registrant were outstanding.

U.S. Silica Holdings, Inc.
FORM 10-Q
For the Quarter Ended September 30, 2018

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PART I—FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

U.S. SILICA HOLDINGS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

(Unaudited; dollars in thousands)

	September 30, 2018	December 31, 2017
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 345,583	\$ 384,567
Accounts receivable, net	247,692	212,586
Inventories, net	170,723	92,376
Prepaid expenses and other current assets	18,827	13,715
Income tax deposits	2,804	—
Total current assets	785,629	703,244
Property, plant and mine development, net	1,868,382	1,169,155
Goodwill	414,741	272,079
Intangible assets, net	195,498	150,007
Other assets	24,405	12,798
Total assets	\$ 3,288,655	\$ 2,307,283
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable and accrued expenses	\$ 231,302	\$ 171,041
Current portion of long-term debt	13,479	6,867
Current portion of deferred revenue	40,755	36,128
Income tax payable	—	1,566
Total current liabilities	285,536	215,602
Long-term debt, net	1,251,053	505,075
Deferred revenue	79,095	82,286
Liability for pension and other post-retirement benefits	46,045	52,867
Deferred income taxes, net	169,432	29,856
Other long-term obligations	88,013	25,091
Total liabilities	1,919,174	910,777
Commitments and Contingencies (Note O)		
Stockholders' Equity:		
Preferred stock, \$0.01 par value, 10,000,000 shares authorized; zero issued and outstanding at September 30, 2018 and December 31, 2017	—	—
Common stock, \$0.01 par value, 500,000,000 shares authorized; 81,773,127 issued and 77,511,268 outstanding at September 30, 2018; 81,267,205 issued and 80,524,255 outstanding at December 31, 2017	815	812
Additional paid-in capital	1,165,661	1,147,084
Retained earnings	328,624	287,992
Treasury stock, at cost, 4,261,859 and 742,950 shares at September 30, 2018 and December 31, 2017, respectively	(120,078)	(25,456)
Accumulated other comprehensive loss	(8,753)	(13,926)
Total U.S. Silica Holdings, Inc. stockholders' equity	1,366,269	1,396,506
Non-controlling interest	3,212	—
Total stockholders' equity	1,369,481	1,396,506
Total liabilities and stockholders' equity	\$ 3,288,655	\$ 2,307,283

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

U.S. SILICA HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited; dollars in thousands, except per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Sales:				
Product	\$ 348,635	\$ 281,138	\$ 989,380	\$ 720,281
Service	74,537	63,885	230,538	160,004
Total sales	423,172	345,023	1,219,918	880,285
Cost of sales (excluding depreciation, depletion and amortization):				
Product	270,370	187,634	713,845	512,115
Service	51,966	40,155	162,246	100,173
Total cost of sales (excluding depreciation, depletion and amortization)	322,336	227,789	876,091	612,288
Operating expenses:				
Selling, general and administrative	37,980	29,542	114,803	77,553
Depreciation, depletion and amortization	37,150	24,673	102,305	69,898
Asset impairment	—	—	16,184	—
Total operating expenses	75,130	54,215	233,292	147,451
Operating income	25,706	63,019	110,535	120,546
Other (expense) income:				
Interest expense	(21,999)	(8,347)	(49,283)	(24,098)
Other income (expense), net, including interest income	1,062	1,308	2,808	(3,091)
Total other expense	(20,937)	(7,039)	(46,475)	(27,189)
Income before income taxes	4,769	55,980	64,060	93,357
Income tax benefit (expense)	1,547	(14,707)	(8,806)	(20,103)
Net income	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Less: Net income (loss) attributable to non-controlling interest	—	—	—	—
Net income attributable to U.S. Silica Holdings, Inc.	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Earnings per share attributable to U.S. Silica Holdings, Inc.:				
Basic	\$ 0.08	\$ 0.51	\$ 0.71	\$ 0.90
Diluted	\$ 0.08	\$ 0.50	\$ 0.70	\$ 0.89
Weighted average shares outstanding:				
Basic	77,365	81,121	78,209	81,058
Diluted	77,859	81,783	78,676	81,976
Dividends declared per share	\$ 0.06	\$ 0.06	\$ 0.19	\$ 0.19

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

U.S. SILICA HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited; dollars in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Other comprehensive income (loss):				
Unrealized gain (loss) on derivatives (net of tax of \$193 and \$(2) for the three months ended September 30, 2018 and 2017, respectively, and \$195 and \$(26) for the nine months ended September 30, 2018 and 2017, respectively)	538	(4)	544	(43)
Foreign currency translation adjustment (net of tax of \$(135) and zero for the three months ended September 30, 2018 and 2017, respectively, and \$(144) and zero for the nine months ended September 30, 2018 and 2017, respectively)	95	—	(446)	—
Pension and other post-retirement benefits liability adjustment (net of tax of \$88 and \$2,180 for the three months ended September 30, 2018 and 2017, respectively, and \$1,617 and \$1,335 for the nine months ended September 30, 2018 and 2017, respectively)	277	3,618	5,075	2,216
Comprehensive income	\$ 7,226	\$ 44,887	\$ 60,427	\$ 75,427
Less: Comprehensive income (loss) attributable to non-controlling interest	—	—	—	—
Comprehensive income attributable to U.S. Silica Holdings, Inc.	\$ 7,226	\$ 44,887	\$ 60,427	\$ 75,427

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

U.S. SILICA HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited; dollars in thousands, except per share amounts)

	Common Stock	Treasury Stock	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total U.S. Silica Holdings Inc., Stockholders' Equity	Non-controlling Interest	Total Stockholders' Equity
Balance at December 31, 2017	\$ 812	\$ (25,456)	\$ 1,147,084	\$ 287,992	\$ (13,926)	\$ 1,396,506	\$ —	\$ 1,396,506
Net income	—	—	—	55,254	—	55,254	—	55,254
Unrealized gain on derivatives	—	—	—	—	544	544	—	544
Foreign currency translation adjustment	—	—	—	—	(446)	(446)	—	(446)
Pension and post-retirement liability	—	—	—	—	5,075	5,075	—	5,075
Cash dividend declared (\$0.1875 per share)	—	—	—	(14,622)	—	(14,622)	—	(14,622)
Contributions from non-controlling interest	—	—	—	—	—	—	3,212	3,212
Common stock-based compensation plans activity:								
Equity-based compensation	—	—	18,612	—	—	18,612	—	18,612
Proceeds from options exercised	—	93	(32)	—	—	61	—	61
Shares withheld for employee taxes related to vested restricted stock and stock units	3	(4,216)	(3)	—	—	(4,216)	—	(4,216)
Repurchase of common stock	—	(90,499)	—	—	—	(90,499)	—	(90,499)
Balance at September 30, 2018	\$ 815	\$ (120,078)	\$ 1,165,661	\$ 328,624	\$ (8,753)	\$ 1,366,269	\$ 3,212	\$ 1,369,481

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

U.S. SILICA HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited; dollars in thousands)

	Nine Months Ended September 30,	
	2018	2017
Operating activities:		
Net income	\$ 55,254	\$ 73,254
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation, depletion and amortization	102,305	69,898
Asset impairment	16,184	—
Debt issuance amortization	3,953	1,038
Original issue discount amortization	1,668	281
Deferred income taxes	7,699	10,149
Deferred revenue	(16,565)	32,487
(Gain) loss on disposal of property, plant and equipment	(5,404)	362
Equity-based compensation	18,612	18,520
Bad debt provision, net of recoveries	516	1,779
Other	3,554	3,300
Changes in operating assets and liabilities, net of effects of acquisitions:		
Accounts receivable	8,177	(106,119)
Inventories	2,732	(521)
Prepaid expenses and other current assets	(3,057)	7,449
Income taxes	(4,369)	9,737
Accounts payable and accrued expenses	27,866	40,589
Short-term and long-term obligations-vendor incentives	54,632	—
Liability for pension and other post-retirement benefits	(730)	(788)
Other noncurrent assets and liabilities	(5,337)	(554)
Net cash provided by operating activities	<u>267,690</u>	<u>160,861</u>
Investing activities:		
Capital expenditures	(220,787)	(261,243)
Capitalized intellectual property costs	(7,045)	(2,600)
Acquisition of business, net of cash acquired	(743,325)	(119,719)
Proceeds from sale of property, plant and equipment	26,305	12
Net cash used in investing activities	<u>(944,852)</u>	<u>(383,550)</u>
Financing activities:		
Dividends paid	(15,068)	(15,285)
Repurchase of common stock	(90,499)	—
Proceeds from options exercised	61	798
Tax payments related to shares withheld for vested restricted stock and stock units	(4,216)	(3,945)
Proceeds from long-term debt	1,280,000	—
Payments on long-term debt	(497,655)	(5,576)
Financing fees paid	(37,272)	—
Contributions from non-controlling interest	3,212	—
Principal payments on capital lease obligations	(385)	(878)
Net cash provided by (used in) financing activities	<u>638,178</u>	<u>(24,886)</u>
Net decrease in cash and cash equivalents	<u>(38,984)</u>	<u>(247,575)</u>

Cash and cash equivalents, beginning of period		384,567	711,225
Cash and cash equivalents, end of period	\$	345,583	\$ 463,650
Supplemental cash flow information:			
Cash paid during the period for:			
Interest	\$	44,105	\$ 18,498
Taxes, net of refunds	\$	5,003	\$ 216
Related party purchases	\$	2,233	\$ 3,171
Non-cash Items:			
Equipment received	\$	—	\$ 18,185
Accrued capital expenditures	\$	36,693	\$ 28,683
Capital lease assumed by third-party	\$	119	\$ —
Asset retirement obligation assumed by third-party	\$	2,116	\$ —

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

U.S. SILICA HOLDINGS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited; dollars in thousands, except per share amounts)

NOTE A—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Consolidation

The accompanying Condensed Consolidated Financial Statements (the “Financial Statements”) of U.S. Silica Holdings, Inc. (“Holdings,” and together with its subsidiaries “we,” “us” or the “Company”) included in this Quarterly Report on Form 10-Q, have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X issued by the U.S. Securities and Exchange Commission (“SEC”). They do not contain certain information included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017; therefore, the interim Condensed Consolidated Financial Statements should be read in conjunction with that Annual Report on Form 10-K. In the opinion of management, all adjustments necessary for a fair presentation of the Financial Statements have been included. Such adjustments are of a normal, recurring nature.

Certain reclassifications of prior year's amounts have been made to conform to the current year presentation. In conforming to the current year's presentation, the Company identified and corrected an amount in its statement of cash flows for the nine months ended September 30, 2017. The correction reduced Capital Expenditures within Net Cash Used in Investing Activities with a corresponding decrease to Accounts Payable and Accrued Expenses within Net Cash Used in Operating Activities. The amount is presented as Non-cash Accrued Capital Expenditures and had no impact in the Company's Balance Sheet, Income Statement or Net Change in Cash and Cash Equivalents in the Statement of Cash Flows.

Throughout this report we refer to (i) our Condensed Consolidated Balance Sheets as our “Balance Sheets,” (ii) our Condensed Consolidated Statements of Operations as our “Income Statements,” and (iii) our Condensed Consolidated Statements of Cash Flows as our “Cash Flows.”

Consolidation

The Financial Statements include the accounts of Holdings and its direct and indirect wholly-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

We follow FASB Accounting Standards Codification (“ASC”) guidance for identification and reporting of entities over which control is achieved through means other than voting rights. The guidance defines such entities as Variable Interest Entities (“VIEs”). We consolidate VIEs when we have variable interests and are the primary beneficiary. We continually evaluate our involvement with VIEs to determine when these criteria are met.

During the third quarter of 2018 we finalized a shareholders' agreement with unrelated parties to form a limited liability company with the purpose of constructing and operating a water pipeline to transport and sell water. In connection with the shareholders' agreement, we acquired a 50% equity ownership for \$3.2 million, with a maximum capital contribution of \$7.0 million, and a water rights intangible asset for \$0.7 million. Based on our evaluation, we have determined that we are the primary beneficiary of this VIE and therefore we are required to consolidate it, including the current construction work in progress of \$6.4 million.

Unaudited Interim Financial Statements

The accompanying Balance Sheet as of September 30, 2018; the Income Statements and Condensed Consolidated Statements of Comprehensive Income for the three and nine months ended September 30, 2018 and 2017; the Condensed Consolidated Statements of Stockholders' Equity and Cash Flows for the nine months ended September 30, 2018; and other information disclosed in the related notes are unaudited. The Balance Sheet as of December 31, 2017, was derived from our audited consolidated financial statements included in our 2017 Annual Report on Form 10-K.

Use of Estimates and Assumptions

The preparation of the Financial Statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the related disclosure of contingent assets and liabilities at the date of the Financial Statements and the reported amounts of revenues and expenses during the reporting period. The more significant areas requiring the use of management estimates and assumptions relate to the purchase price allocation for businesses acquired; mineral reserves that are the basis for future cash flow estimates utilized in impairment calculations and units-of-production amortization calculations; environmental, reclamation and closure obligations; estimates of recoverable minerals; estimates of allowance for doubtful accounts; estimates of fair value for certain reporting units and asset impairments (including impairments of goodwill and other long-lived assets); write-downs of inventory to net realizable value; equity-based

compensation expense; post-employment, post-retirement and other employee benefit liabilities; valuation allowances for deferred tax assets; contingent considerations; reserves for contingencies and litigation and the fair value and accounting treatment of financial instruments, including derivative instruments. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. Accordingly, actual results may differ significantly from these estimates under different assumptions or conditions.

Revenue Recognition

Products

We derive our product sales by mining and processing minerals that our customers purchase for various uses. Our product sales are primarily a function of the price per ton and the number of tons sold. We primarily sell our products through individual purchase orders executed under short-term price agreements or at prevailing market rates. The amount invoiced reflects product, transportation and / or additional handling services as applicable, such as storage, transloading the product from railcars to trucks and last mile logistics to the customer site. We invoice most of our product customers on a per shipment basis, although for some larger customers, we consolidate invoices weekly or monthly. Standard collection terms are net 30 days, although extended terms are offered in competitive situations.

We recognize revenue for products and materials at a point in time following the transfer of control of such items to the customer, which typically occurs upon shipment or delivery depending on the terms of the underlying contracts. We account for shipping and handling activities related to product and material sales contracts with customers as costs to fulfill our promise to transfer the associated products pursuant to the accounting policy election allowed under ASC 606-10-18. Accordingly, we record amounts billed for shipping and handling costs as a component of net sales and accrue and classify related costs as a component of cost of sales at the time revenue is recognized.

For a limited number of customers, we sell under long-term, minimum purchase supply agreements. These agreements define, among other commitments, the volume of product that our customers must purchase, the volume of product that we must provide and the price that we will charge and that our customers will pay for each product. Prices under these agreements are generally fixed and subject to certain contractual adjustments. Sometimes these agreements may undergo negotiations regarding pricing and volume requirements, which may often occur in volatile market conditions. While these negotiations continue, we may deliver sand at prices or at volumes below the requirements in our existing supply agreements. We do not consider these agreements solely representative of contracts with customers. An executed order specifying the type and quantity of product to be delivered, in combination with the noted agreements, comprise our contracts in these arrangements.

Service

We derive our service revenues primarily through the provision of transportation, equipment rental, and contract labor services to companies in the oil and gas industry. Transportation services typically consist of transporting customer proppant from storage facilities to proximal well-sites and are contracted through work orders executed under established pricing agreements. The amount invoiced reflects the transportation services rendered. Equipment rental services provide customers with use of either dedicated or nonspecific wellhead proppant delivery equipment solutions for contractual periods defined either through formal lease agreements or executed work orders under established pricing agreements. The amounts invoiced reflect the length of time the equipment set was utilized in the billing period. Contract labor services provide customers with proppant delivery equipment operators through work orders executed under established pricing agreements. The amounts invoiced reflect the amount of time our labor services were utilized in the billing period.

We typically invoice our customers on a weekly or monthly basis; however, some customers receive invoices upon well-site operation completion. Standard collection terms are net 30 days, although extended terms are offered in competitive situations. We typically recognize revenue for specific, dedicated equipment set rental arrangements under ASC 840, Leases. For the remaining components of service revenue, we have applied the practical expedient allowed under ASC 606-10-55-18 to recognize transportation revenues in proportion to the amount we have the right to invoice.

Contracts with Multiple Performance Obligations

For contracts that contain multiple performance obligations, such as work orders containing a combination of product, transportation, equipment rentals, and contract labor services, we allocate the transaction price to each performance obligation identified in the contract based on relative standalone selling prices, or estimates of such prices, and recognize the related revenue as control of each individual product or service is transferred to the customer, in satisfaction of the corresponding performance obligations. We typically invoice our customers on a weekly or monthly basis; however, some customers receive invoices upon well-site operation completion. Standard collection terms are net 30 days, although extended terms are offered in competitive situations.

Taxes Collected from Customers and Remitted to Governmental Authorities.

We exclude from our measurement of transaction prices all taxes assessed by governmental authorities that are both (i) imposed on and concurrent with a specific revenue-producing transaction and (ii) collected from customers. Accordingly, such tax amounts are not included as a component of net sales or cost of sales.

Deferred Revenues

For a limited number of customers, we enter into supply agreements which give customers the right to make advanced payments toward the purchase of certain products at specified volumes over an average initial period of one to five years. These payments represent consideration that is unconditional for which we have yet to transfer the related product. These payments are recorded as contract liabilities referred to as “deferred revenues” upon receipt and recognized as revenue upon delivery of the related product.

Unbilled Receivables

Revenues recognized in advance of invoice issuance create assets referred to as “unbilled receivables.” Any portion of our unbilled receivables for which our right to consideration is conditional on a factor other than the passage of time is considered a contract asset. These assets are presented on a combined basis with accounts receivable and are converted to accounts receivable once billed.

Foreign Currency Translation

For our operations in countries where the functional currency is other than the U.S. dollar, balance sheet amounts are translated using the exchange rate in effect at the balance sheet date. Income statement amounts are translated monthly using the average exchange rate for the respective month. The gains and losses resulting from the changes in exchange rates from year-to-year are recorded as a component of accumulated other comprehensive income or loss as currency translation adjustments, net of tax. Any gains or losses on transactions in currencies other than the functional currency are included in other income (expense), net, including interest income. For the three and nine months ended September 30, 2018, other income (expense), net, including interest income, includes a net realized foreign currency transaction gain of \$0.1 million and \$0.3 million, respectively.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes previous revenue recognition guidance. The new guidance introduces a new principles-based framework for revenue recognition and disclosure. Since its issuance, the FASB has issued additional ASUs, amending the guidance and the effective dates of amendments, and the SEC has rescinded certain related SEC guidance.

On January 1, 2018, we adopted the new accounting standard and all of the related amendments (“new revenue standard”) to all contracts using the modified retrospective method. Adoption of the new revenue standard did not result in a material cumulative effect adjustment to the opening balance of retained earnings. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. We do not expect the adoption of the new revenue standard to have a material impact to our net income on an ongoing basis. See Note S - Revenue to these Financial Statements for additional disclosures.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) and in July 2018, ASU 2018-11 Leases (Topic 842): Targeted Improvements. The new standard(s) establishes a right-of-use (ROU) model that requires a lessee to record an ROU asset and a lease liability on the balance sheet for all leases with terms greater than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition. Similarly, lessors will be required to classify leases as sales-type, finance or operating, with classification affecting the pattern of income recognition. Classification for both lessees and lessors will be based on an assessment of whether risks and rewards as well as substantive control have been transferred through a lease contract. This update is effective for public entities for financial statements issued for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption is permitted. The new transition method allows companies to use the effective date of the new leases standard as the date of initial application on transition. We have established a project team in order to analyze the standard and have begun to review our current accounting policies and procedures to identify potential differences and changes which would result from applying the requirements of the new standard to our lease contracts. We have selected a lease software to help us account for the new lease standard. We have identified our population of lease agreements and are currently assessing the impact of other arrangements for embedded leases. While we continue to evaluate the effect of the standard, we anticipate that the adoption will result in a material increase in assets and liabilities on our consolidated balance sheet and will not have a material impact on our consolidated income statement or statement of cash flows.

In January 2017, the FASB issued ASU 2017-04, Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment, which removes Step 2 from the goodwill impairment test. It is effective for annual and interim periods beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed with a measurement date after January 1, 2017. We do not expect the adoption of this standard to have a material impact on our consolidated financial statements.

In March 2017, the FASB issued ASU 2017-07, Compensation-Retirement Benefits (Topic 715), Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit. The update requires companies to include the service cost component of net periodic benefit costs in the same line item or items as compensation costs arising from services rendered by the associated employees during the period. The update also disallows capitalization of the other components of net periodic benefit costs and requires those costs to be presented in the income statement separately from the service cost component and outside of a subtotal of income from operations. The update is effective for fiscal years beginning after December 15, 2017, including interim periods within those annual periods for public business entities. Companies are required to retrospectively apply the requirement for a separate presentation in the income statement of service costs and other components of net benefit cost and prospectively adopt the requirement to limit the capitalization of benefit costs to the service component. Application of a practical expedient is allowed permitting an employer to use the amounts disclosed in its pension and other postretirement benefit plan note for the prior comparative periods as the estimation basis for applying the retrospective presentation requirements.

We implemented the update on January 1, 2018 and utilized the practical expedient to estimate the impact on the prior comparative period information presented in the interim and annual financial statements. We previously capitalized all net periodic benefit costs incurred for plant personnel in inventory and recorded the majority of net periodic benefit costs incurred by corporate personnel and retirees into selling, general, and administrative expenses.

The following is a reconciliation of the effect of the reclassification (in thousands) of the net benefit cost in the Company's condensed consolidated statements of income for the three and nine months ended September 30, 2017. In addition, the table reflects the effect of the reclassification between product sales and services sales to conform to the current year's presentation for the three and nine months ended September 30, 2017:

	Three Months Ended September 30, 2017			
	As Previously Reported	Services Reclassifications	ASU 2017-07 Adjustments	As Revised
Product Sales	\$ 295,768	\$ (14,630)	\$ —	\$ 281,138
Service Sales	49,255	14,630	—	63,885
Total sales	345,023	—	—	345,023
Product cost of sales	189,105	(1,337)	(134)	187,634
Service cost of sales	38,818	1,337	—	40,155
Total cost of sales (excluding depreciation, depletion and amortization)	227,923	—	(134)	227,789
Selling, general and administrative expenses	29,602	—	(60)	29,542
Operating income	62,825	—	194	63,019
Other income (expense)	1,502	—	(194)	1,308

	Nine Months Ended September 30, 2017			
	As Previously Reported	Services Reclassifications	ASU 2017-07 Adjustments	As Revised
Product Sales	\$ 751,111	\$ (30,830)	\$ —	\$ 720,281
Service Sales	129,174	30,830	—	160,004
Total sales	880,285	—	—	880,285
Product cost of sales	515,767	(3,131)	(521)	512,115
Service cost of sales	97,042	3,131	—	100,173
Total cost of sales (excluding depreciation, depletion and amortization)	612,809	—	(521)	612,288
Selling, general and administrative expenses	77,955	—	(402)	77,553
Operating income	119,623	—	923	120,546
Other income (expense)	(2,168)	—	(923)	(3,091)

In February 2018, the FASB issued Accounting Standards Update ASU 2018-02, Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The ASU provides that the stranded tax effects from the Tax Act in accumulated other comprehensive loss may be reclassified to retained earnings. The ASU is effective February 1, 2019, with early adoption permitted. We are currently evaluating the effect that the transition guidance will have on our financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-15, Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. The new guidance requires a customer in a cloud computing arrangement (i.e., hosting arrangement) that is a service contract to follow the internal-use software guidance in ASC 350-40 to determine which implementation costs to capitalize as assets or expense as incurred. Capitalized implementation costs related to a hosting arrangement that is a service contract will be amortized over the term of the hosting arrangement, beginning when the module or component of the hosting arrangement is ready for its intended use. The update is effective for calendar-year public business entities in 2020. For all other calendar-year entities, it is effective for annual periods beginning in 2021 and interim periods in 2022. Early adoption is permitted. We are currently evaluating the effect that the guidance will have on our financial statements and related disclosures.

NOTE B—EARNINGS PER SHARE

Basic earnings per common share is computed by dividing income available to common stockholders by the weighted average number of common shares outstanding for the period. Diluted earnings per common share is computed similarly to basic earnings per common share except that the weighted average number of common shares outstanding is increased to include the number of additional common shares that would have been outstanding if the potentially dilutive common shares had been issued.

The following table shows the computation of basic and diluted earnings per share for the three and nine months ended September 30, 2018 and 2017:

<i>In thousands, except per share amounts</i>	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Numerator:				
Net income attributable to U.S. Silica Holdings, Inc.	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Denominator:				
Weighted average shares outstanding	77,365	81,121	78,209	81,058
Diluted effect of stock awards	494	662	467	918
Weighted average shares outstanding assuming dilution	77,859	81,783	78,676	81,976
Earnings per share attributable to U.S. Silica Holdings, Inc.:				
Basic earnings per share	\$ 0.08	\$ 0.51	\$ 0.71	\$ 0.90
Diluted earnings per share	\$ 0.08	\$ 0.50	\$ 0.70	\$ 0.89

Certain stock options, restricted stock awards and performance share units were excluded from the computation of diluted earnings per share because their effect would have been anti-dilutive. Weighted-average stock awards (in thousands) excluded from the calculation of diluted earnings per common share were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Weighted-average outstanding stock options excluded	589	564	562	195
Weighted-average outstanding restricted stock and performance share units awards excluded	151	457	289	358

NOTE C—CAPITAL STRUCTURE AND ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

Common Stock

Our Amended and Restated Certificate of Incorporation authorizes up to 500,000,000 shares of common stock, par value of \$0.01. Subject to the rights of holders of any series of preferred stock, all of the voting power of the stockholders of Holdings shall be vested in the holders of the common stock. There were 81,773,127 shares issued and 77,511,268 shares outstanding at September 30, 2018. There were 81,267,205 shares issued and 80,524,255 shares outstanding at December 31, 2017.

During the nine months ended September 30, 2018, our Board of Directors declared quarterly cash dividends as follows:

Dividends per Common Share	Declaration Date	Record Date	Payable Date
\$ 0.0625	February 16, 2018	March 15, 2018	April 5, 2018
\$ 0.0625	May 14, 2018	June 15, 2018	July 6, 2018
\$ 0.0625	July 16, 2018	September 14, 2018	October 3, 2018

All dividends were paid as scheduled.

Any determination to pay dividends and other distributions in cash, stock, or property by Holdings in the future will be at the discretion of our Board of Directors and will be dependent on then-existing conditions, including our business and financial condition, results of operations, liquidity, capital requirements, contractual restrictions including restrictive covenants contained in our debt agreements, and other factors. Additionally, because we are a holding company, our ability to pay dividends on our common stock may be limited by restrictions on the ability of our subsidiaries to pay dividends or make distributions to us, including restrictions under the terms of the agreements governing our indebtedness.

Preferred Stock

Our Amended and Restated Certificate of Incorporation authorizes our Board of Directors to issue up to 10,000,000 shares, in the aggregate, of preferred stock, par value of \$0.01 in one or more series, to fix the powers, preferences and other rights of such series, and any qualifications, limitations or restrictions thereof, including the dividend rate, conversion rights, voting rights, redemption rights and liquidation preference, and to fix the number of shares to be included in any such series, without any further vote or action by our stockholders.

There were no shares of preferred stock issued or outstanding at September 30, 2018 or December 31, 2017. At present, we have no plans to issue any preferred stock.

Share Repurchase Program

We are authorized by our Board of Directors to repurchase shares of our outstanding common stock from time to time on the open market or in privately negotiated transactions. Stock repurchases, if any, will be funded using our available liquidity. The timing and amount of stock repurchases will depend on a variety of factors, including the market conditions as well as corporate and regulatory considerations.

In May 2018, our Board of Directors authorized the repurchase of up to \$200 million of our common stock. As of September 30, 2018, we have repurchased a total of 536,139 shares of our common stock at an average price of \$28.91 and had \$184.5 million of remaining availability under this program.

In October 2017, our Board of Directors authorized us to repurchase up to \$100 million of our common stock by December 11, 2018. During the three months ended March 31, 2018, we repurchased 2,828,023 shares of our common stock at an average price of \$26.52 under this program. As of March 31, 2018, we had repurchased a total of 3,555,104 shares of our common stock at an average price of \$28.13, and fully utilized our shares authorized to be repurchased at such time.

Our Board of Directors previously had authorized the repurchase of up to \$50.0 million of our common stock. This program expired on December 11, 2017. We repurchased a total of 706,093 shares of our common stock at an average price of \$23.83 under this program.

Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss consists of fair value adjustments associated with cash flow hedges, accumulated adjustments for net experience losses and prior service cost related to employee benefit plans and foreign currency translation adjustments, net of tax. The following table presents the changes in accumulated other comprehensive loss by component (in thousands) during the nine months ended September 30, 2018:

	For the Nine Months Ended September 30, 2018			
	Unrealized gain/(loss) on cash flow hedges	Foreign currency translation adjustments	Pension and other post-retirement benefits liability	Total
Beginning Balance	\$ (76)	\$ (6)	\$ (13,844)	\$ (13,926)
Other comprehensive gain (loss) before reclassifications	468	(446)	3,617	3,639
Amounts reclassified from accumulated other comprehensive loss	76	—	1,458	1,534
Ending Balance	\$ 468	\$ (452)	\$ (8,769)	\$ (8,753)

Amounts reclassified from accumulated other comprehensive loss related to cash flow hedges are included in interest expense in our Income Statements and amounts reclassified related to pension and other post-retirement benefits are included in the computation of net periodic benefit costs at their pre-tax amounts.

NOTE D—BUSINESS COMBINATIONS

2018 Acquisition:

On May 1, 2018, we completed the acquisition of all of the outstanding capital stock of EP Acquisition Parent, Inc., a Delaware corporation ("EPAP"), and the ultimate parent of EP Minerals, LLC ("EPM"). Contemporaneous with the merger, EPAP was renamed EP Minerals Holdings, Inc. ("EPMH"). The consideration paid consisted of \$743.3 million of cash, net of cash acquired of \$19.1 million, including \$0.5 million of post-closing adjustments. EPM is a global producer of engineered materials derived from industrial minerals, including diatomaceous earth, clay (calcium bentonite) and perlite. EPM's industrial minerals are used as filter aids, absorbents and functional additives for a variety of industries including food and beverage, biofuels, recreational water, oil and gas, farm and home, landscape, sports turf, paint, plastics, and insecticides. The acquisition of EPM increased our industrial materials product offering in our Industrial & Specialty Products segment.

We have accounted for the acquisition of EPMH under the acquisition method of accounting in accordance with ASC 805, Business Combinations. Estimates of fair value included in the consolidated financial statements represent our best estimates and valuations. In accordance with the acquisition method of accounting, the allocation of consideration value is subject to adjustment until we complete our analysis, within a period of time not to exceed one year after the date of acquisition, or May 1, 2019, in order to provide us with the time to complete the valuation of its assets and liabilities.

The following table sets forth the preliminary allocation of the purchase price to EPMH's identifiable tangible and intangible assets acquired and liabilities assumed (in thousands):

<i>Preliminary allocation of purchase price:</i>	<i>(In thousands)</i>	
Accounts receivable, net	\$	43,354
Inventories		84,395
Property, plant and mine development		123,086
Mineral rights		462,050
Identifiable intangible assets - finite lived		21,050
Identifiable intangible assets - indefinite lived		25,050
Prepays and deposits		2,054
Other assets		4,089
Goodwill		139,862
Total assets acquired		904,990
Accounts payable		13,435
Accrued expenses and other current liabilities		8,255
Deferred tax liabilities		130,209
Long term obligations		9,766
Total liabilities assumed	\$	161,665
Net assets acquired	\$	743,325

The acquired intangible assets and the related estimated useful lives consist of the following:

	Approximate Fair Value	Estimated Useful Life
	<i>(in thousands)</i>	<i>(in years)</i>
Technology and intellectual property	\$ 2,000	15
Customer relationships	19,050	15
Total identifiable intangible assets - finite lived	\$ 21,050	
Trade name	\$ 25,050	
Total identifiable intangible assets - indefinite lived	\$ 25,050	

Goodwill represents the excess of the purchase price over the fair value of the underlying net assets acquired. Goodwill in this transaction is attributable to planned growth in our industrial materials product offering in our Industrial & Specialty Products segment. Intangibles and goodwill are not expected to be deductible for tax purposes.

Our Income Statement included revenue of \$60.1 million and net income of \$3.9 million for the three months ended September 30, 2018, and revenue of \$101.9 million and net income of \$3.3 million for the nine months ended September 30, 2018, respectively, associated with EPMH following the date of acquisition. We incurred \$11.0 million of acquisition-related charges, excluding debt issuance costs, for the nine months ended September 30, 2018, which are included in selling, general and administrative expenses on our Income Statement.

The acquisition of EPMH was accounted for using the acquisition method of accounting. The purchase price and purchase price allocation are subject to customary post-closing adjustments and changes in the fair value of assets and liabilities. The above estimated fair values of net assets acquired are based on the information that was available as of the reporting date. We believe that the information provides a reasonable basis for estimating the fair values of the acquired assets and assumed liabilities, but the potential for measurement period adjustments exists based on our continuing review of matters related to the acquisition. As a result, our final purchase price allocation may be significantly different than reflected above. We expect to complete the purchase price allocation as soon as practicable, but no later than one year from the acquisition date.

Unaudited Pro Forma Results

The results of EPMH's operations have been included in the consolidated financial statements subsequent to the acquisition date. EPMH's fiscal year end was November 30 and the Company's fiscal year end was December 31. Under SEC regulations, if a target's fiscal year end varies by more than 93 days from the acquirer's fiscal year end, it is required to adjust

interim periods until it is within 93 days. Since EPMH's fiscal year end was within 93 days of the Company's fiscal year end, no adjustment is necessary and EPMH's fiscal year end and interim period ends are used as if they coincided with the Company's fiscal year end and interim period end. The following unaudited pro forma consolidated financial information reflects the results of operations as if the EPMH acquisition had occurred on January 1, 2017, after giving effect to certain purchase accounting adjustments. Material non-recurring transaction costs attributable to the business combination were \$15.2 million. Pro forma net income includes incremental interest expense due to the related debt financing, incremental depreciation and depletion expense related to the fair value adjustment of property, plant and mine development, amortization expense related to identifiable intangible assets, and tax expense related to the combined tax provisions. There were no proforma adjustments for the three months ended September 30, 2018. This information does not purport to be indicative of the actual results that would have occurred if the acquisition had actually been completed on the date indicated, nor is it necessarily indicative of the future operating results or the financial position of the combined company (in thousands, except per share amounts):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Sales	\$ 451,566	\$ 341,113	\$ 879,493	\$ 629,196
Net income	\$ 19,693	\$ 13,196	\$ 70,539	\$ 8,097
Basic earnings per share	\$ 0.25	\$ 0.16	\$ 0.90	\$ 0.10
Diluted earnings per share	\$ 0.25	\$ 0.16	\$ 0.89	\$ 0.10
Basic shares	77,784	81,087	78,636	81,032
Diluted shares	78,480	81,945	79,328	82,103

2017 Acquisitions:

White Armor Acquisition:

On April 1, 2017, we completed the acquisition of White Armor, a product line of cool roof granules used in industrial roofing applications, for cash consideration of \$18.6 million. The final purchase price was allocated to goodwill of approximately \$3.9 million, identifiable intangible assets of \$12.8 million and other net assets of approximately \$1.9 million.

Goodwill in this transaction is attributable to planned growth in our specialty industrial sand segment. The goodwill amount is included in our Industrial & Specialty Products segment. Identifiable definite lived intangibles, including customer relationships, and goodwill are expected to be deductible for tax purposes.

We incurred \$0.2 million of acquisition-related charges which are included in selling, general and administrative expenses during the year ended December 31, 2017. Revenue and earnings for White Armor after the acquisition date are not presented as the business was integrated into our operations subsequent to the acquisition and therefore impracticable to quantify.

MS Sand Acquisition:

On August 16, 2017, we completed the acquisition of Mississippi Sand, LLC ("MS Sand"), a Missouri limited liability company, for cash consideration of approximately \$95.4 million, net of cash acquired of \$2.2 million. As is normal and customary, subsequent adjustments were made including \$(0.5) million of net working capital adjustments plus an additional \$6.1 million consideration paid related to a pre-existing contracted asset sale, which was entered into prior to our acquisition, for total cash consideration of \$101.0 million. MS Sand is a frac sand mining and logistics company based in St. Louis, Missouri. The acquisition of MS Sand increased our regional frac sand product offering in our Oil & Gas Proppants segment.

We have accounted for the acquisition of MS Sand under the acquisition method of accounting in accordance with ASC 805, Business Combinations, and have accounted for measurement period adjustments in accordance with ASU 2015-16, Simplifying the Accounting for Measurement-Period Adjustments. Estimates of fair value included in the consolidated financial statements represent our best estimates and valuations. In accordance with the acquisition method of accounting, the allocation of consideration value was subject to adjustment until we completed our analysis, in a period of time, but not to exceed one year after the date of acquisition, or August 16, 2018, in order to provide us with the time to complete the valuation of its assets and liabilities.

The following table sets forth the final allocation of the purchase price to MS Sands' identifiable tangible and intangible assets acquired and liabilities assumed, including measurement period adjustments (in thousands):

	Estimate as of December 31, 2017	Measurement Period Adjustments	Purchase Price Allocation
Accounts receivable	\$ 11,201	\$ —	\$ 11,201
Inventories	8,067	—	8,067
Other current assets	362	—	362
Assets held for sale	9,453	—	9,453
Property, plant and mine development	27,458	—	27,458
Mineral rights	26,300	(2,800)	23,500
Other non-current assets	1,136	—	1,136
Goodwill	22,522	2,800	25,322
Customer relationships	1,840	—	1,840
Total assets acquired	108,339	—	108,339
Accounts payable and accrued expenses	3,761	—	3,761
Unfavorable leasehold positions	2,237	—	2,237
Notes Payable	866	—	866
Other long term liabilities	—	—	—
Asset retirement obligations	474	—	474
Total liabilities assumed	7,338	—	7,338
Net assets acquired	\$ 101,001	\$ —	\$ 101,001

The acquired intangible assets and the related estimated useful lives consist of the following:

	Approximate Fair Value (in thousands)	Estimated Useful Life (in years)
Customer relationships	\$ 1,840	15

Goodwill in this transaction is attributable to planned growth in our regional frac sand product offering in our Oil & Gas Proppants segment. The goodwill amount is included in our Oil & Gas Proppants segment. Identifiable definite lived intangibles, including customer relationships, and goodwill are expected to be deductible for tax purposes.

We incurred \$1.0 million of acquisition-related charges which are included in selling, general and administrative expenses. Revenue and earnings for MS Sand after the acquisition date are not presented as the business was integrated into our operations subsequent to the acquisition and therefore impracticable to quantify.

Unaudited Pro Forma Results

The results of MS Sand's operations have been included in the consolidated financial statements subsequent to the acquisition dates. The following unaudited pro forma consolidated financial information reflects the results of operations as if the MS Sand Acquisition had occurred on January 1, 2016, after giving effect to certain purchase accounting adjustments. These adjustments mainly include incremental depreciation expense related to the fair value adjustment of property, plant, equipment and mine development, amortization expense related to identifiable intangible assets and tax expense related to the combined tax provisions. This information does not purport to be indicative of the actual results that would have occurred if the acquisition had actually been completed on the date indicated, nor is it necessarily indicative of the future operating results or the financial position of the combined company (in thousands, except per share amounts):

	For the year ended December 31,	
	2017	2016
Sales	\$ 1,287,202	\$ 642,951
Net income (loss)	\$ 143,604	\$ (55,835)
Basic earnings (loss) per share	\$ 1.77	\$ (0.86)
Diluted earnings (loss) per share	\$ 1.75	\$ (0.86)

NOTE E—ACCOUNTS RECEIVABLE

At September 30, 2018 and December 31, 2017, accounts receivable (in thousands) consisted of the following:

	September 30, 2018	December 31, 2017
Trade receivables	\$ 248,361	\$ 217,649
Less: Allowance for doubtful accounts	(7,133)	(7,100)
Net trade receivables	241,228	210,549
Other receivables	6,464	2,037
Total accounts receivable	<u>\$ 247,692</u>	<u>\$ 212,586</u>

Changes in our allowance for doubtful accounts (in thousands) during the nine months ended September 30, 2018 are as follows:

	September 30, 2018
Beginning balance	\$ 7,100
Bad debt provision	516
Write-offs	(483)
Ending balance	<u>\$ 7,133</u>

Our ten largest customers accounted for approximately 48% and 50% of total sales during the nine months ended September 30, 2018 and 2017, respectively. Sales to one of our customers accounted for 15% of our total sales during the nine months ended September 30, 2018. Sales to two of our customers accounted for 11% and 10% of our total sales during the nine months ended September 30, 2017. No other customers accounted for 10% or more of our total sales. At September 30, 2018, one of our customers' accounts receivable represented 19% of our total accounts receivable, net of allowance. At December 31, 2017, two of our customers' accounts receivable represented 19% and 11% of our total accounts receivable, net of allowance. No other customers accounted for 10% or more of our total accounts receivable.

NOTE F—INVENTORIES

At September 30, 2018 and December 31, 2017, inventories (in thousands) consisted of the following:

	September 30, 2018	December 31, 2017
Supplies	\$ 39,053	\$ 21,277
Raw materials and work in process	75,932	28,034
Finished goods	55,738	43,065
Total inventories	<u>\$ 170,723</u>	<u>\$ 92,376</u>

NOTE G—PROPERTY, PLANT AND MINE DEVELOPMENT

At September 30, 2018 and December 31, 2017, property, plant and mine development (in thousands) consisted of the following:

	September 30, 2018	December 31, 2017
Mining property and mine development	\$ 1,051,506	\$ 586,242
Asset retirement cost	14,308	14,184
Land	43,221	36,552
Land improvements	67,928	45,878
Buildings	69,242	56,330
Machinery and equipment	849,340	590,566
Furniture and fixtures	4,092	2,953
Construction-in-progress	184,431	189,970
	<u>2,284,068</u>	<u>1,522,675</u>
Accumulated depletion, depreciation and amortization	(415,686)	(353,520)
Total property, plant and mine development, net	<u>\$ 1,868,382</u>	<u>\$ 1,169,155</u>

At September 30, 2018 and December 31, 2017, the aggregate cost of machinery and equipment acquired under capital leases was \$5.1 million and \$0.9 million, respectively, reduced by accumulated depreciation of \$0.3 million and \$0.2 million, respectively. The amount of interest costs capitalized in property, plant and mine development was \$5.2 million and \$0.2 million for the nine months ended September 30, 2018 and 2017, respectively.

On March 21, 2018, we completed the sale of three transload facilities located in the Permian, Eagle Ford, and Marcellus Basins to CIG Logistics (“CIG”) for total consideration of \$86.1 million, including the assumption by CIG of \$2.2 million of Company obligations. Total cash consideration was \$83.9 million. The consideration includes receipt of a vendor incentive from CIG to enter into master transloading service arrangements. Of the total consideration, \$25.8 million was allocated to the fair value of the transload facilities, which had a net book value of \$20.0 million and resulted in a gain on sale of \$5.8 million. The consideration included a related asset retirement obligation of \$2.1 million and an equipment note of \$0.1 million assumed by CIG. In addition, \$60.3 million of the consideration received in excess of the facilities’ fair value was allocated to vendor incentives to be recognized as a reduction of costs using a service-level methodology over the contract lives of the transloading service arrangements. At September 30, 2018, vendor incentives of \$5.1 million and \$49.3 million were classified in accounts payable and accrued expenses and in other long-term obligations, respectively, on our balance sheet.

Separately, on March 21, 2018, we accrued \$7.9 million in contract termination costs for facilities contracts operated by third-parties, which will not transfer to CIG. During the second quarter of 2018, as a result of the final settlement of these contracts, we recorded a \$2.7 million credit in selling, general and administrative expenses on our Income Statement.

During the second quarter of 2018, we recorded a \$16.2 million asset impairment related to the closure of our resin coating facility and associated product portfolio.

NOTE H—GOODWILL AND INTANGIBLE ASSETS

The changes in the carrying amount of goodwill (in thousands) consisted of the following:

	Goodwill
Balance at December 31, 2017	\$ 272,079
EPMH acquisition	139,862
MS Sand acquisition measurement period adjustment	2,800
Balance at September 30, 2018	<u>\$ 414,741</u>

The changes in the carrying amount of intangible assets (in thousands) consisted of the following:

	Estimated Useful Life (in years)	September 30, 2018			December 31, 2017		
		Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Technology and intellectual property	15	\$ 79,748	\$ (10,394)	\$ 69,354	\$ 70,703	\$ (5,917)	\$ 64,786
Customer relationships	13 - 15	80,279	(12,953)	67,326	61,229	(9,076)	52,153
Total definite-lived intangible assets:		\$ 160,027	\$ (23,347)	\$ 136,680	\$ 131,932	\$ (14,993)	\$ 116,939
Trade name		58,118	—	58,118	33,068	—	33,068
Other		700	—	700	—	—	—
Total intangible assets:		\$ 218,845	\$ (23,347)	\$ 195,498	\$ 165,000	\$ (14,993)	\$ 150,007

Amortization expense was \$3.2 million and \$8.4 million for the three and nine months ended September 30, 2018, respectively. Amortization expense was \$2.3 million and \$6.6 million for the three and nine months ended September 30, 2017, respectively.

The estimated amortization expense related to definite-lived intangible assets (in thousands) for the five succeeding years is as follows:

2018	\$	2,776
2019		11,095
2020		11,098
2021		11,098
2022		11,083

NOTE I—DEBT

At September 30, 2018 and December 31, 2017, debt (in thousands) consisted of the following:

	September 30, 2018	December 31, 2017
Senior secured credit facility:		
Revolver expiring May 1, 2023 (8.25% at September 30, 2018 and 5.75% at December 31, 2017)	\$ —	\$ —
Term loan facility—final maturity May 1, 2025 (6.25% at September 30, 2018 and 4.75%-5.25% December 31, 2017)	1,273,600	489,075
Less: Unamortized original issue discount	(6,417)	(944)
Less: Unamortized debt issuance cost	(29,279)	(3,099)
Note payable secured by royalty interest	25,720	24,740
Customer note payable	—	745
Equipment notes payable	384	719
Capital leases	524	706
Total debt	1,264,532	511,942
Less: current portion	(13,479)	(6,867)
Total long-term portion of debt	\$ 1,251,053	\$ 505,075

Revolving Line-of-Credit

We have a \$100.0 million revolving line-of-credit (the “Revolver”), with zero drawn and \$4.8 million allocated for letters of credit as of September 30, 2018, leaving \$95.2 million available under the Revolver.

Senior Secured Credit Facility

At September 30, 2018, contractual maturities of our senior secured credit facility (in thousands) are as follows:

2018	\$	3,200
2019		12,800
2020		12,800
2021		12,800
Thereafter		1,232,000
Total	\$	1,273,600

On May 1, 2018, we entered into the Third Amended and Restated Credit Agreement (the "Credit Agreement"). The Credit Agreement increases our existing senior debt by entering into a new \$1.380 billion senior secured credit facility, consisting of a \$1.280 billion term loan and a \$100 million revolving credit facility that may also be used for swingline loans or letters of credit, and we may elect to increase the term loan in accordance with the terms of the Credit Agreement. Borrowings under the Credit Agreement will bear interest at variable rates as determined at our election, at LIBOR or a base rate, in each case, plus an applicable margin. In addition, under the Credit Agreement, we are required to pay a per annum facility fee and fees for letters of credit. The Credit Agreement is secured by substantially all of our assets and of our domestic subsidiaries' assets and a pledge of the equity interests in such entities. The term loan matures on May 1, 2025, and the revolving credit facility expires May 1, 2023. We incurred \$37.3 million in debt issuance costs and original issue discount, of which \$35.0 million was capitalized, as a result of the new Credit Agreement, and wrote-off \$1.1 million of capitalized debt issuance costs relating to the previously existing senior debt.

The facility contains covenants that, among other things, govern our ability, and certain of our subsidiaries' abilities, to create, incur or assume indebtedness and liens, to make acquisitions or investments, to sell assets and to pay dividends. The Credit Agreement also requires us to maintain a consolidated leverage ratio of no more than 3.75:1.00 as of the last day of any fiscal quarter whenever usage of the Revolver (other than certain undrawn letters of credit) exceeds 30% of the Revolver commitment. These covenants are subject to a number of important exceptions and qualifications. The Credit Agreement includes events of default and other affirmative and negative covenants that are usual for facilities and transactions of this type. As of September 30, 2018, and December 31, 2017, we are in compliance with all covenants in accordance with our senior secured credit facility.

Note Payable Secured by Royalty Interest

In conjunction with the acquisition of NBI in August 2016, we assumed a note payable secured by a royalty interest. The monthly royalty payment is calculated based on future tonnages and sales related to the sand shipped from our Tyler, Texas facility. The note payable is due by June 30, 2032. The note does not provide a stated interest rate. The minimum payments (in thousands) for the next five years required by the note are as follows:

2018	\$	438
2019		1,750
2020		1,750
2021		1,750
2022		1,750

Under this agreement once a certain number of tons have been shipped from the Tyler facility, the minimum payments will decrease to \$0.5 million per year, subject to proration in the period this threshold is met.

The royalty note payable fair value was estimated to be \$22.5 million on the acquisition date. The estimate was made using a discounted cash flow model, which calculated the present value of projected future cash payments required under the agreement using a discounted rate of 14%. As of September 30, 2018, the note payable had a balance of \$25.7 million. The increase in the note payable amount is due to interest paid-in-kind. The effective interest rate based on the updated projected future cash payments was 20% at September 30, 2018.

NOTE J—DEFERRED REVENUE

We enter into certain customer supply agreements which give the customers the right to purchase certain products for a discounted price at certain volumes over an average initial contract term of one to five years. The advance payments represent future purchases and are recorded as deferred revenue, recognized as revenue over the contract term of each supply agreement. During the nine months ended September 30, 2018 we received advances of \$28.0 million, including a customer's purchase of an interest in our sand reserves in Lamesa, Texas, and securing a long-term supply of sand. At September 30, 2018 and December 31, 2017, the total deferred revenue balance was \$119.9 million and \$118.4 million, respectively, of which \$40.8 million and \$36.1 million was classified as current on our Balance Sheets.

NOTE K—ASSET RETIREMENT OBLIGATION

Mine reclamation or future remediation costs for inactive mines are accrued based on management's best estimate at the end of each period of the costs expected to be incurred at a site. Such cost estimates include, where applicable, ongoing care, maintenance and monitoring costs. Changes in estimates at inactive mines are reflected in earnings in the period an estimate is revised.

As of September 30, 2018, we had a liability of \$20.1 million in other long-term obligations related to our asset retirement obligation. Changes in the asset retirement obligation (in thousands) during the nine months ended September 30, 2018 are as follows:

	September 30, 2018
Beginning balance	\$ 19,032
Accretion	894
Additions and revisions of prior estimates	(486)
Addition related to EPMH acquisition	2,733
Disposal related to sale of transloads	(2,116)
Ending balance	\$ 20,057

NOTE L—FAIR VALUE ACCOUNTING

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

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

Level 2—Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3—Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

Cash Equivalents

Due to the short-term maturity, we believe our cash equivalent instruments at September 30, 2018 and December 31, 2017 approximate their reported carrying values.

Long-Term Debt, Including Current Maturities

We believe that the fair values of our long-term debt, including current maturities, approximate their carrying values based on their effective interest rates compared to current market rates.

Derivative Instruments

The estimated fair value of our derivative instruments are recorded at each reporting period and are based upon widely accepted valuation techniques, including discounted cash flow analysis on the expected cash flows of each derivative contract. This analysis reflects the contractual terms of the derivatives, including the period to maturity, and uses observable market-

based inputs, including interest rate curves and implied volatilities. We also incorporate credit valuation adjustments to appropriately reflect both our nonperformance risk as well as that of the respective counterparty in the fair value measurements.

Although we have determined that the majority of the inputs used to value our derivatives fall within Level 2 of the fair value hierarchy, the credit valuation adjustments associated with our derivatives utilize Level 3 inputs, such as estimates of current credit spreads to evaluate the likelihood of default of ourselves and our counterparties. However, as of September 30, 2018, we have assessed that the impact of the credit valuation adjustments on the overall valuation of our derivative positions is not significant. As a result, we have determined that our derivative valuations in their entirety are classified in Level 2 of the fair value hierarchy. Refer to Note M - Derivative Instruments to these Financial Statements for the fair value of our derivative instruments and additional disclosures.

NOTE M—DERIVATIVE INSTRUMENTS

Cash Flow Hedges of Interest Rate Risk

We enter into interest rate swap agreements in connection with our term loan facility (the "Term Loan") to add stability to interest expense and to manage our exposure to interest rate movements. The derivative instruments are recorded on the balance sheet within other long-term assets or liabilities at their fair values. We have designated the interest rate swap agreements as qualified cash flow hedges. Accordingly, the effective portion of the gain or loss on the derivative instrument is reported as a component of other comprehensive income and recognized in earnings in the same period or periods during which the hedged transaction affects earnings.

The following table summarizes the fair value of our derivative instruments (in thousands, except contract/notional amount). See Note L - Fair Value Accounting for additional disclosures regarding the estimated fair values of our derivative instruments at September 30, 2018 and December 31, 2017.

	September 30, 2018				December 31, 2017			
	Maturity Date	Contract/Notional Amount	Carrying Amount	Fair Value	Maturity Date	Contract/Notional Amount	Carrying Amount	Fair Value
LIBOR ⁽¹⁾ interest rate swap agreement	2020	\$440 million	\$ 419	\$ 419	—	\$ —	\$ —	\$ —
LIBOR ⁽¹⁾ interest rate swap agreement	2020	\$200 million	\$ 198	\$ 198	—	\$ —	\$ —	\$ —
LIBOR interest rate cap agreement	2019	\$249 million	\$ —	\$ —	2019	\$249 million	\$ —	\$ —

⁽¹⁾ Agreements fix the LIBOR interest rate base to 2.74%

On May 1, 2018, as a result of entering into the new Credit Agreement, we determined the existing interest rate cap derivative no longer qualified for hedge accounting. During the nine months ended September 30, 2018 we recognized \$76 thousand of deferred losses in accumulated other comprehensive loss into earnings.

During the nine months ended September 30, 2018, we had no ineffectiveness for the interest rate swap derivatives.

The following table summarizes the effect of derivative instruments (in thousands) on our income statements and our consolidated statements of comprehensive income for the nine months ended September 30, 2018 and 2017.

	September 30, 2018	September 30, 2017
Deferred losses from derivatives in OCI, beginning of period	\$ (76)	\$ (32)
Gain (loss) recognized in OCI from derivative instruments	468	(43)
Loss reclassified from Accumulated OCI	76	—
Deferred losses from derivatives in OCI, end of period	\$ 468	\$ (75)

NOTE N—EQUITY-BASED COMPENSATION

In July 2011, we adopted the U.S. Silica Holdings, Inc. 2011 Incentive Compensation Plan (the "2011 Plan"), which was amended and restated in May 2015. The 2011 Plan provides for grants of stock options, restricted stock, performance share units and other incentive-based awards. We believe our 2011 Plan aligns the interests of our employees and directors with those of our common stockholders. At September 30, 2018, we have 3,632,323 shares of common stock that may be issued under the 2011 Plan. We use a combination of treasury stock and new shares if necessary to satisfy option exercises or vesting of restricted awards and performance share units.

Stock Options

The following table summarizes the status of, and changes in, our stock option awards during the nine months ended September 30, 2018:

	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Term in Years
Outstanding at December 31, 2017	908,919	\$ 28.46	\$ 7,008	6.1 years
Granted	—	—	—	
Exercised	(4,167)	14.65	—	
Forfeited	(918)	31.30	—	
Expired	(1,838)	\$ 31.30	\$ —	
Outstanding at September 30, 2018	901,996	\$ 28.52	\$ 1,611	5.0 years
Exercisable at September 30, 2018	855,446	\$ 27.38	\$ 1,611	5.0 years

There were no grants of stock options during the three and nine months ended September 30, 2018 and 2017.

There were 4,167 stock options exercised during the nine months ended September 30, 2018. There were 16,839 and 43,774 stock options exercised during the three and nine months ended September 30, 2017, respectively. The total intrinsic value of stock options exercised was \$0.1 million for the nine months ended September 30, 2018. The total intrinsic value of stock options exercised was \$0.3 million and \$1.2 million for the three and nine months ended September 30, 2017, respectively. Cash received from options exercised during the nine months ended September 30, 2018 was \$61 thousand. Cash received from options exercised during the three and nine months ended September 30, 2017 was \$0.3 million and \$0.8 million, respectively. The tax benefit realized from option exercises was fourteen thousand for the nine months ended September 30, 2018. The tax benefit realized from option exercises was \$0.1 million and \$0.4 million for the three and nine months ended September 30, 2017, respectively.

We recognized \$0.2 million and \$1.1 million of equity-based compensation expense related to options during the three and nine months ended September 30, 2018, respectively. We recognized \$0.6 million and \$1.9 million of equity-based compensation expense related to options during the three and nine months ended September 30, 2017, respectively. As of September 30, 2018, there was \$0.1 million of total unrecognized compensation expense related to these options, which is expected to be recognized over a weighted-average period of approximately 0.1 years. We account for forfeitures as they occur.

Restricted Stock and Restricted Stock Unit Awards

The following table summarizes the status of, and changes in, our unvested restricted stock awards during the nine months ended September 30, 2018:

	Number of Shares	Grant Date Weighted Average Fair Value
Unvested, December 31, 2017	461,346	\$ 30.76
Granted	280,118	26.24
Vested	(219,635)	30.08
Forfeited	(26,924)	31.39
Unvested, September 30, 2018	494,905	\$ 28.47

We granted 42,187 and 280,118 restricted stock and restricted stock unit awards during the three and nine months ended September 30, 2018, respectively. We granted 7,771 and 148,722 restricted stock and restricted stock unit awards during the three and nine months ended September 30, 2017, respectively. The fair value of the awards was based on the market price of our stock at date of grant.

We recognized \$1.4 million and \$5.2 million of equity-based compensation expense related to restricted stock awards during the three and nine months ended September 30, 2018, respectively. We recognized \$1.9 million and \$5.2 million of equity-based compensation expense related to restricted stock awards during the three and nine months ended September 30, 2017, respectively. As of September 30, 2018, there was \$10.0 million of total unrecognized compensation expense related to these restricted stock awards, which is expected to be recognized over a weighted-average period of 1.9 years.

Performance Share Unit Awards

The following table summarizes the status of, and changes in, our performance share unit awards during the nine months ended September 30, 2018:

	Number of Shares	Grant Date Weighted Average Fair Value
Unvested, December 31, 2017	881,416	\$ 42.16
Granted	201,417	31.24
Vested	(225,000)	41.99
Forfeited	(31,723)	44.93
Unvested, September 30, 2018	826,110	\$ 39.44

We granted 201,417 and 90,501 of performance share unit awards during the nine months ended September 30, 2018 and 2017, respectively. The grant date fair value of these awards was estimated to be \$31.24 and \$67.69 for both the nine months ended September 30, 2018 and 2017, respectively, and the number of units that will vest will depend on the percentage ranking of the Company's total shareholder return ("TSR") compared to the TSRs for each of the companies in the peer group over the three year period from January 1, 2018 through December 31, 2020 for the current period grant, and from January 1, 2017 through December 31, 2019 for the prior year grant. The related compensation expense is recognized on a straight-line basis over the vesting period.

The grant date fair value for these awards was estimated using a Monte Carlo simulation model. The Monte Carlo simulation model requires the use of highly subjective assumptions. Our key assumptions in the model included the price and the expected volatility of our common stock and our self-determined peer group companies' stock, risk-free rate of interest, dividend yields and cross-correlations between our common stock and our self-determined peer group companies' stock.

We recognized \$3.7 million and \$12.3 million of compensation expense related to performance share unit awards during the three and nine months ended September 30, 2018, respectively. We recognized \$4.1 million and \$11.5 million of compensation expense related to performance share unit awards during the three and nine months ended September 30, 2017, respectively. As of September 30, 2018, there was \$10.7 million of estimated total unrecognized compensation expense related to these performance share unit awards, which is expected to be recognized over a weighted-average period of 1.4 year.

NOTE O—COMMITMENTS AND CONTINGENCIES

Future Minimum Annual Commitments at September 30, 2018 (in thousands):

Year ending December 31,	Operating Lease Minimum Rental Payments	Minimum Purchase Commitments
2018	\$ 19,961	\$ 7,237
2019	75,484	21,640
2020	59,872	15,406
2021	40,109	8,307
2022	31,802	5,640
Thereafter	62,375	10,999
Total future lease and purchase commitments	\$ 289,603	\$ 69,229

Operating Leases

We are obligated under certain operating leases for railroad cars, office space, mining property, mining/processing equipment and transportation and other equipment. Certain operating lease agreements include options to purchase the equipment for fair market value at the end of the original lease term. In general, the above leases include renewal options and provide that we pay for all utilities, insurance, taxes and maintenance. Expense related to operating leases and rental agreements totaled approximately \$25.7 million and \$73.4 million for the three and nine months ended September 30, 2018, respectively. Expense related to operating leases and rental agreements totaled approximately \$16.7 million and \$47.9 million for the three and nine months ended September 30, 2017, respectively.

Minimum Purchase Commitments

We enter into service agreements with our transload service providers and transportation service providers. Some of these agreements require us to purchase a minimum amount of services over a specific period of time. Any inability to meet these minimum contract requirements requires us to pay a shortfall fee, which is based on the difference between the minimum amount contracted for and the actual amount purchased.

Contingent Liability on Royalty Agreement

On May 17, 2017, we purchased reserves in Crane County, Texas, for \$94.4 million cash consideration plus contingent consideration. The contingent consideration is a royalty that is based on the tonnage shipped to third-parties. Because the contingent consideration is dependent on future tonnage sold, the amounts of which are uncertain, it is not currently possible to estimate the fair value of these future payments. The contingent consideration will be capitalized at the time a payment is probable and reasonably estimable, and the related depletion expense will be adjusted prospectively.

Other Commitments and Contingencies

Our operating subsidiary, U.S. Silica Company (“U.S. Silica”), has been named as a defendant in various product liability claims alleging silica exposure causing silicosis. During the nine months ended September 30, 2018, three new claims were brought against U.S. Silica. As of September 30, 2018, there were 58 active silica-related products liability claims pending in which U.S. Silica is a defendant. Although the outcomes of these claims cannot be predicted with certainty, in the opinion of management, it is not reasonably possible that the ultimate resolution of these matters will have a material adverse effect on our financial position or results of operations that exceeds the accrual amounts.

We have recorded estimated liabilities for these claims in other long-term obligations as well as estimated recoveries under the indemnity agreement and an estimate of future recoveries under insurance in other assets on our condensed consolidated balance sheets. As of both September 30, 2018, and December 31, 2017 other non-current assets included zero for insurance for third-party products liability claims and other long-term obligations included \$1.0 million for third-party products liability claims.

NOTE P— PENSION AND POST-RETIREMENT BENEFITS

We maintain single-employer noncontributory defined benefit pension plans covering certain employees. There have been no new entrants to the US Silica Company plan since May 2009 and to the EP Management Corporation plan since January 2007 for salaried participants and January 2010 for hourly participants when the plans were frozen to all new employees. The plans provide benefits based on each covered employee’s years of qualifying service. Our funding policy is to contribute amounts within the range of the minimum required and maximum deductible contributions for the plans consistent with a goal of appropriate minimization of the unfunded projected benefit obligations. The pension plans use a benefit level per year of service for covered hourly employees and a final average pay method for covered salaried employees. The plans use the projected unit credit cost method to determine the actuarial valuation.

Net pension benefit cost (in thousands) consisted of the following for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Service cost	\$ 355	\$ 260	\$ 956	\$ 704
Interest cost	1,193	993	3,329	2,447
Expected return on plan assets	(1,627)	(1,317)	(4,361)	(3,405)
Net amortization and deferral	806	443	2,068	1,391
Net pension benefit costs	\$ 727	\$ 379	\$ 1,992	\$ 1,137

In addition, we provide defined benefit post-retirement health care and life insurance benefits to some employees. Covered employees become eligible for these benefits at retirement after meeting minimum age and service requirements. The projected future cost of providing post-retirement benefits, such as healthcare and life insurance, is recognized as an expense as employees render services. We previously maintained a Voluntary Employees' Beneficiary Association trust that was used to partially fund health care benefits for future retirees. Benefits were funded to the extent contributions were tax deductible, which under current legislation is limited. In 2017, the trust terminated upon depletion of its assets, which were used in accordance with trust terms. In general, retiree health benefits are paid as covered expenses are incurred.

Net post-retirement benefit cost (in thousands) consisted of the following for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Service cost	\$ 33	\$ 11	\$ 87	\$ 76
Interest cost	173	79	549	462
Expected return on plan assets	—	—	—	(1)
Net amortization and deferral	—	—	—	107
Net post-retirement benefit costs	\$ 206	\$ 90	\$ 636	\$ 644

We contributed \$1.5 million and \$2.6 million to the qualified pension plan for the three and nine months ended September 30, 2018, respectively. We contributed \$1.5 million and \$1.8 million to the qualified pension plan for the three and nine months ended September 30, 2017, respectively. Total expected employer funding contributions during the fiscal year ending December 31, 2018 are \$3.3 million for the pension plan and \$1.4 million for the post-retirement medical and life plan.

We contribute to three multiemployer defined benefit pension plans under the terms of collective-bargaining agreements for union-represented employees. A multiemployer plan is subject to collective bargaining for employees of two or more unrelated companies. These plans allow multiple employers to pool their pension resources and realize efficiencies associated with the daily administration of the plan. Multiemployer plans are generally governed by a board of trustees composed of management and labor representatives and are funded through employer contributions. However, in most cases, management is not directly represented. Our contributions to individual multiemployer pension funds did not exceed 5% of the fund's total contributions. Additionally, our contributions to the multiemployer post-retirement benefit plans were immaterial for the three and nine months ended September 30, 2018 and 2017.

NOTE Q— OBLIGATIONS UNDER GUARANTEES

We have indemnified our insurers against any loss they may incur in the event that holders of surety bonds, issued on our behalf, execute the bonds. As of September 30, 2018, there was \$32.7 million in bonds outstanding. The majority of these bonds, \$29.7 million, relate to reclamation requirements issued by various governmental authorities. Reclamation bonds remain outstanding until the mining area is reclaimed and the authority issues a formal release. The remaining bonds relate to such indefinite purposes as licenses, permits, and tax collection.

NOTE R— INCOME TAXES

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code including, but not limited to, (1) bonus depreciation that will allow for full expensing of qualified property; (2) reduction of the U.S. federal corporate tax rate; (3) elimination of the corporate alternative minimum tax; (4) a new limitation on deductible interest expense; (5) the repeal of the domestic production activity deduction; (6) limitations on the deductibility of certain executive compensation; and (7) limitations on net operating losses generated after December 31, 2017, to 80 percent of taxable income.

The SEC staff issued SAB 118, which provides guidance on accounting for the tax effects of the Tax Act. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under ASC 740. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Act for which the accounting under ASC 740 is complete. To the extent that a company's accounting for certain income tax effects of the Tax Act is incomplete but it is able to determine a reasonable estimate, it must record a provisional estimate in the financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act. As we are not subject to either the international changes of the Tax Act or other applicable

provisions, we believe that the income tax effects of the Tax Act applicable to our accounting under ASC 740 is substantially complete as of September 30, 2018. Additional information that may affect the accounting under ASC 740 would include further clarification and guidance on how the Internal Revenue Service and state taxing authorities will implement the Tax Act. In August 2018, the Internal Revenue Service released Tax Act guidance on limitations on executive compensation which clarified transition rules for certain compensation agreements in existence on November 2, 2017. Based on the issued guidance, we recorded a discrete tax expense of \$0.7 million to remove deferred tax assets on certain executive compensation agreements that were not eligible for transition relief.

The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. Because ASC 740-10-25-47 requires the effect of a change in tax laws or rates to be recognized as of the date of enactment, we were required to adjust deferred tax assets and liabilities as of December 22, 2017. Accordingly, for the year ended December 31, 2017, we recorded a decrease related to deferred tax assets and liabilities of \$45.0 million and \$80.8 million, respectively, with a corresponding net adjustment to deferred income tax benefit of \$35.8 million.

Under the Tax Act, net operating loss (NOL) deductions arising in tax years beginning after December 31, 2017 can only offset up to 80 percent of future taxable income. The Act also prohibits NOL carrybacks, but allows indefinite carryforwards for NOLs arising in tax years beginning after December 31, 2017. Net operating losses arising before January 1, 2018 are accounted for under the previous tax rules that imposed no limit on the amount of the taxable income that can be set off using NOLs and that can be carried back 2 years, and carried forward 20 years.

The Tax Act repeals the corporate alternative minimum tax (AMT), effective for tax years beginning after December 31, 2017, but allows an entity to claim portions of any unused AMT credits over the next four years to offset its regular tax liability. An entity with unused AMT credits as of December 31, 2017 can first use these credits to offset its regular tax for 2017, and can then claim up to 50 percent of the remaining AMT credits in 2018, 2019, and 2020, with all remaining AMT credits refundable in 2021.

For interim period reporting, we record income taxes using an estimated annual effective tax rate based upon projected annual income, forecasted permanent tax differences, discrete items and statutory rates in states in which we operate. At the end of each interim period, we update the estimated annual effective tax rate, and if the estimated tax rate changes based on new information, we make a cumulative adjustment in the period. We record the tax effect of an unusual or infrequently occurring item in the interim period in which it occurs as a discrete item of tax.

For the three and nine months ended September 30, 2018, we recorded a tax expense of zero and \$0.7 million, respectively, related to equity compensation pursuant to ASU 2016-09. For the three and nine months ended September 30, 2017, we recorded a tax benefit of \$0.1 million and \$1.8 million, respectively, related to equity compensation pursuant to ASU 2016-09.

The effective tax rate was (32)% and 14% for the three and nine months ended September 30, 2018, respectively. The effective tax rate was 26% and 22% for the three and nine months ended and September 30, 2017, respectively. The effective tax rate for the three and nine months ended September 30, 2018 would have been (52)% and 11%, respectively, without the discrete tax items. The effective tax rate for the three and nine months ended September 30, 2017 would have been 26% and 23%, respectively, without the discrete tax items.

With reduced profits mainly driven by decreased sand pricing, we updated our estimated annual effective tax rate to 11%. Our tax benefit in the period represented the cumulative adjustment to reflect the updated estimated annual effective tax rate, partially offset by the discrete tax items. Because of the updated tax rate and cumulative adjustment in the period, the (32)% tax rate is not representative of future tax rates.

Historically, our actual effective tax rates have differed from the statutory effective rate primarily due to the benefit received from statutory percentage depletion allowances. The deduction for statutory percentage depletion does not necessarily change proportionately to changes in income before income taxes.

NOTE S—REVENUE

We consider sales disaggregated at the product and service level by segment to depict how the nature, amount, timing and uncertainty of revenues and cash flow are impacted by changes in economic factors. The following table disaggregates our sales by major source for the three and nine months ended September 30, 2018 (in thousands):

Category	Three Months Ended September 30, 2018			Nine Months Ended September 30, 2018		
	Oil & Gas Proppants	Industrial & Specialty Products	Total Sales	Oil & Gas Proppants	Industrial & Specialty Products	Total Sales
Product	\$ 227,915	\$ 120,720	\$ 348,635	\$ 708,924	\$ 280,456	\$ 989,380
Service	74,537	—	74,537	230,521	17	230,538
Total Sales	\$ 302,452	\$ 120,720	\$ 423,172	\$ 939,445	\$ 280,473	\$ 1,219,918

The following tables reflect the changes in our contract assets, which we classify as unbilled receivables and our contract liabilities, which we classify as deferred revenues, for the nine months ended September 30, 2018 (in thousands):

	Unbilled Receivables
December 31, 2017	\$ 5,245
Reclassifications to billed receivables	(10,668)
Revenues recognized in excess of period billings	5,911
September 30, 2018	\$ 488

	Deferred Revenue
December 31, 2017	\$ 118,414
Revenues recognized from balances held at the beginning of the period	(26,600)
Revenues deferred from period collections on unfulfilled performance obligations	28,036
September 30, 2018	\$ 119,850

We have elected to use the practical expedients allowed under ASC 606-10-50-14, pursuant to which we have excluded disclosures of transaction prices allocated to remaining performance obligations and when we expect to recognize such revenue. The majority of our remaining performance obligations are primarily comprised of unfulfilled product, transportation service, and labor service orders, all of which hold a remaining duration of less than one year. The long term portion of deferred revenue primarily represents a combination of refundable and nonrefundable customer prepayments for which related current performance obligations do not yet exist, but are expected to arise, before the expiration of the contract. Our residual unfulfilled performance obligations are comprised primarily of long-term equipment rental arrangements in which we recognize revenues equal to what we have a right to invoice. Generally, no variable consideration exists related to our remaining performance obligations and no consideration is excluded from the associated transaction prices.

NOTE T— RELATED PARTY TRANSACTIONS

An employee, who was an officer of one of our operating subsidiaries prior to the third quarter of 2018, holds an ownership interest in a transportation brokerage and logistics services vendor, from which we made purchases of approximately \$0.7 million and \$2.5 million for the three and nine months ended September 30, 2018, respectively, and \$1.0 million and \$2.8 million for the three and nine months ended September 30, 2017, respectively.

NOTE U— SEGMENT REPORTING

Our business is organized into two reportable segments, Oil & Gas Proppants and Industrial & Specialty Products, based on end markets. The reportable segments are consistent with how management views the markets that we serve and the financial information reviewed by the chief operating decision maker. We manage our Oil & Gas Proppants and Industrial & Specialty Products businesses as components of an enterprise for which separate information is available and is evaluated regularly by the chief operating decision maker in deciding how to allocate resources and assess performance.

In the Oil & Gas Proppants segment, we serve the oil and gas recovery market primarily by providing and delivering fracturing sand, or “frac sand,” which is pumped down oil and natural gas wells to prop open rock fissures and increase the flow rate of oil and natural gas from the wells.

The Industrial & Specialty Products segment consists of over 400 products and materials used in a variety of industries, including container glass, fiberglass, specialty glass, flat glass, building products, fillers and extenders, foundry products, chemicals, recreation products and filtration products.

An operating segment's performance is primarily evaluated based on segment contribution margin, which excludes certain corporate costs not associated with the operations of the segment. These corporate costs are separately stated below and include costs that are related to functional areas such as operations management, corporate purchasing, accounting, treasury, information technology, legal and human resources. We believe that segment contribution margin, as defined above, is an appropriate measure for evaluating the operating performance of our segments. However, this measure should be considered in addition to, not a substitute for, or superior to, net income (loss) or other measures of financial performance prepared in accordance with generally accepted accounting principles. The other accounting policies of each of the two reporting segments are the same as those in Note A - Summary of Significant Accounting Policies to these Financial Statements.

The following table presents sales and segment contribution margin (in thousands) for the reporting segments and other operating results not allocated to the reported segments for the three and nine months ended September 30, 2018 and 2017:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Sales:				
Oil & Gas Proppants	\$ 302,452	\$ 286,369	\$ 939,445	\$ 714,345
Industrial & Specialty Products	120,720	58,654	280,473	165,940
Total sales	423,172	345,023	1,219,918	880,285
Segment contribution margin:				
Oil & Gas Proppants	89,550	96,087	303,591	206,149
Industrial & Specialty Products	48,697	23,978	110,528	67,462
Total segment contribution margin	138,247	120,065	414,119	273,611
Operating activities excluded from segment cost of sales	(37,411)	(2,831)	(70,292)	(5,614)
Selling, general and administrative	(37,980)	(29,542)	(114,803)	(77,553)
Depreciation, depletion and amortization	(37,150)	(24,673)	(102,305)	(69,898)
Asset impairment	—	—	(16,184)	—
Interest expense	(21,999)	(8,347)	(49,283)	(24,098)
Other income (expense), net, including interest income	1,062	1,308	2,808	(3,091)
Income tax benefit (expense)	1,547	(14,707)	(8,806)	(20,103)
Net income	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Less: Net income (loss) attributable to non-controlling interest	—	—	—	—
Net income attributable to U.S. Silica Holdings, Inc.	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254

Asset information, including capital expenditures and depreciation, depletion, and amortization, by segment is not included in reports used by management in its monitoring of performance and, therefore, is not reported by segment. At September 30, 2018, goodwill of \$414.7 million has been allocated to these segments with \$250.3 million assigned to Oil & Gas Proppants and \$164.5 million to Industrial & Specialty Products. At December 31, 2017, goodwill of \$272.1 million had been allocated to these segments with \$247.5 million assigned to Oil & Gas Proppants and \$24.6 million to Industrial & Specialty Products.

NOTE V— SUBSEQUENT EVENTS

On October 3, 2018, we paid a cash dividend of \$0.0625 per share to common stockholders of record on September 14, 2018, which had been declared by our Board of Directors on July 16, 2018.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read together with the Condensed Consolidated Financial Statements and the accompanying notes included in Part I, Item 1 of this Quarterly Report on Form 10-Q as well as the Consolidated Financial Statements, the accompanying notes and the related Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A"), contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 (the "2017 Annual Report").

Overview

We are a performance materials company and one of the largest domestic producers of commercial silica, a specialized mineral that is a critical input into a variety of attractive end markets. Through our recent acquisition of EP Minerals, LLC, we are an industry leader in the production of products derived from diatomaceous earth, perlite, engineered clays, and non-activated clays. During our 118-year history, we have developed core competencies in mining, processing, logistics and materials science that enable us to produce and cost-effectively deliver over 400 diversified products to customers across these markets. As of September 30, 2018, we operate 28 production facilities across the United States. We control 748 million tons of reserves of commercial silica, which can be processed to make 316 million tons of finished products that meet American Petroleum Institute (API) frac sand specifications, and 53 million tons of reserves of diatomaceous earth, perlite, and clays.

Our operations are organized into two segments based on end markets served: (1) Oil & Gas Proppants and (2) Industrial & Specialty Products. Our segments are complementary because our ability to sell to a wide range of customers across end markets allows us to maximize recovery rates in our mining operations, optimize our asset utilization and reduce the cyclicity of our earnings.

Acquisitions

On May 1, 2018, we completed the acquisition of all of the outstanding capital stock of EP Acquisition Parent, Inc., a Delaware corporation ("EPAP"), and the ultimate parent of EP Minerals, LLC ("EPM"). Contemporaneous with the merger, EPAP was renamed EP Minerals Holdings, Inc. ("EPMH"). The consideration paid consisted of \$743.3 million of cash, net of cash acquired of \$19.1 million, including \$0.5 million of post-closing adjustments. EPM is a global producer of engineered materials derived from industrial minerals, including diatomaceous earth, clay (calcium bentonite) and perlite. EPM's industrial minerals are used as filter aids, absorbents and functional additives for a variety of industries including food and beverage, biofuels, recreational water, oil and gas, farm and home, landscape, sports turf, paint, plastics, and insecticides. The acquisition of EPM increased our industrial materials product offering in our Industrial & Specialty Products segment.

On August 16, 2017, we completed the acquisition of Mississippi Sand, LLC ("MS Sand"). MS Sand is a frac sand mining and logistics company based in St. Louis, Missouri.

On April 1, 2017, we completed the acquisition of White Armor (the "White Armor acquisition"), a product line of cool roof granules used in industrial roofing applications.

See accompanying Note D - Business Combinations to our Consolidated Financial Statements in Part 1, Item 1 of this Quarterly Report on Form 10-Q for pro forma results and other details regarding these acquisitions.

Recent Trends and Outlook

Oil and gas proppants end market trends

Increased demand for frac sand has historically been driven by the growth in the use of hydraulic fracturing as a means to extract hydrocarbons from shale formations. According to Rystad Energy's Proppant Market report - 4Q 2018, published on September 11, 2018, U.S. raw sand proppant demand was 48% higher on a run rate basis during the third quarter of 2018 than its previous peak in 2014, and is expected to continue to grow.

Declines in oil prices beginning in 2015 reduced oil and gas drilling and completion activity in North America during 2015 and most of 2016. As of September 30, 2016, the U.S. land rig count had fallen over 70% from its peak in 2014. Demand for frac sand fell in conjunction with the rig count and activity levels, partially offset by higher proppant per well to optimize recovery and production rates. The North American market for proppant stabilized and began to grow during the last quarter of 2016 due to increases in North America oil and gas drilling and completion activity. As of September 30, 2018, U.S. land rig count has increased 60% since December 31, 2016. Driven by the corresponding increase in frac sand demand, tons sold increased sequentially during the three months ended September 30, 2018 compared to the three months ended June 30, 2018, as summarized below. Average selling price per ton declined sequentially, mainly driven by more tons sold from in-basin plants, increased proppant supply, and decreased sand pricing.

Amounts in thousands
except per ton data

	Three Months Ended				Percentage Change		
	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2018 vs. June 30, 2018	June 30, 2018 vs. March 31, 2018	March 31, 2018 vs. December 31, 2017
Oil & Gas Proppants							
Sales	\$ 302,452	\$ 324,063	\$ 312,930	\$ 306,019	(7)%	4 %	2 %
Tons Sold	3,821	3,465	3,252	3,171	10 %	7 %	3 %
Average Selling Price per Ton	\$ 79.16	\$ 93.52	\$ 96.23	\$ 96.51	(15)%	(3)%	— %

However, if the recovery in oil and gas drilling and completion activity does not continue, demand for frac sand may decline, which could result in us selling fewer tons, selling tons at lower prices, or both. If we sell less frac sand, or sell frac sand at lower prices, our revenue, net income, cash generated from operating activities, and liquidity would be adversely affected. We could evaluate actions to reduce cost and improve liquidity. For instance, depending on market conditions, we could implement additional cost improvement projects or reduce our capital spending by delaying or canceling capital projects.

We believe fluctuations in frac sand demand and price may occur as the market adjusts to changing supply and demand due to energy pricing fluctuations. Fluctuations in price may also occur as the supply of in-basin sand changes. We continue to expect long-term growth in oil and gas drilling in North American shale basins.

Oil and natural gas exploration and production companies' and oilfield service providers' preferences and expectations have been evolving in recent years. A proppant supplier's logistics capabilities have become an important differentiating factor when competing for business, on both a spot and contract basis. Many of our customers increasingly seek convenient in-basin and wellhead proppant delivery capability from their proppant supplier. We believe that, over time, proppant customers will prefer to consolidate their purchases across a smaller group of suppliers with robust logistics capabilities and a broad offering of proppants.

Industrial and specialty products end market trends

Demand in the industrial and specialty products end markets is relatively stable and is primarily influenced by key macroeconomic drivers such as housing starts, population growth, light vehicle sales, beer and wine production, repair and remodel activity and industrial production. The primary end markets served by our production used in Industrial & Specialty Products are building and construction products, fillers and extenders, filtration, glassmaking, absorbents, foundry, and sports and recreation. We have been increasing our value-added product offerings in the industrial and specialty products end markets. These new higher margin product sales have increased our Industrial & Specialty Products segment's profitability. For instance, on April 1, 2017, we completed the White Armor acquisition, a product line of cool roof granules used in industrial roofing applications. On May 1, 2018, we also completed the acquisition of EPM, a global producer of engineered materials derived from industrial minerals, including diatomaceous earth, clay (calcium bentonite) and perlite.

Our Strategy

The key drivers of our growth strategy include:

- **Expand our Oil & Gas Proppants production capacity and product portfolio.** We continue to consider and execute several initiatives to increase our frac sand production capacity and augment our proppant product portfolio. We are evaluating Greenfield opportunities and are expanding production capacities and maximizing production efficiencies of our existing facilities.
- **Increase our presence and product offering in industrial and specialty products end markets.** Our research and business development teams work in tandem with our customers to develop new products, which we expect will either increase our presence and market share in certain industrial and specialty products end markets or allow us to enter new markets. We manage a robust pipeline of new products in various stages of development. Some of these products have already come to market, resulting in a positive impact on our financial results. We continue to work toward offering more value-driven industrial and specialty products that will enhance the profitability of the business. For instance, on April 1, 2017, we completed the White Armor acquisition, a product line of cool roof granules used in industrial roofing applications. On May 1, 2018, we also completed the acquisition of EPM, a global producer of engineered materials derived from industrial minerals, including diatomaceous earth, clay (calcium bentonite) and perlite.

- **Optimize product mix and further develop value-added capabilities to maximize margins.** We continue to actively manage our product mix at each of our plants to ensure we maximize our profit margins. This requires us to use our proprietary expertise in balancing key variables, such as mine geology, processing capacities, transportation availability, customer requirements and pricing. We expect to continue investing in ways to increase the value we provide to our customers by expanding our product offerings, improving our supply chain management, upgrading our information technology, and creating a world class customer service model.
- **Expand our supply chain network and leverage our logistics capabilities to meet our customers' needs in each strategic oil and gas basin.** We continue to strategically position our supply chain in order to deliver sand according to our customers' needs, whether at a plant, a transload, or at the wellhead. We believe that our supply chain network and logistics capabilities are a competitive advantage that enables us to provide superior service for our customers.
 - We have expanded our transload network to ensure product is available to meet the in-basin needs of our customers. We primarily expand our transload network through partnerships rather than owned transloads as we believe this approach enables us to receive high quality service from our specialized transloading partners without the significant capital investment related to owning the assets. This approach allows us to provide strong customer service and puts us in a position to take advantage of opportunistic spot market sales. Our plant sites are strategically located to provide access to key Class I railroads, which enables us to cost effectively send product to each of the strategic basins in North America. We can ship product by truck, barge and rail with an ability to connect to short-line railroads as necessary to meet our customers' evolving in-basin product needs. We expect to continue to develop strategic partnerships with transload operators and transportation providers that will enhance our portfolio of supply chain services that we can provide to customers. As of September 30, 2018, we have storage capacity at 49 transloads located near all of the major shale basins in the United States.
 - Our acquisition of Sandbox extends our delivery capability directly to our customers' wellhead locations, which increases efficiency and provides a lower cost logistics solution for our customers. Sandbox has operations in the major United States oil and gas producing regions, including Texas, New Mexico, Oklahoma, Rocky Mountains and the Northeast, where their largest customers are located.
- **Evaluate both Greenfield and Brownfield expansion opportunities and other acquisitions.** We expect to continue leveraging our reputation, processing capabilities and infrastructure to increase production, as well as explore other opportunities to expand our reserve base and sell new products.
 - We may accomplish this by developing Greenfield projects, where we can capitalize on our technical knowledge of geology, mining and processing and our strong reputation within local communities. For instance, in May 2017, we purchased a new Greenfield site in Crane County, Texas, which became operational during the first quarter of 2018 and will eventually add approximately 4 million tons of annual frac sand capacity. Additionally, in July 2017, we purchased a new Greenfield site near Lamesa, Texas, which became operational during the third quarter of 2018 and will eventually add approximately 6 million tons of annual frac sand capacity.
 - We are continuing to actively pursue acquisitions to grow by taking advantage of our asset footprint, our management's experience with high-growth businesses, and our strong customer relationships. Our primary objective is to acquire Industrial-related assets with value added products and Oil & Gas-related assets with differing levels of frac sand qualities at locations that are complementary to our Oil & Gas Proppants segment, with a focus on mining, processing and logistics to further enhance our market presence. We prioritize acquisitions that provide opportunities to realize synergies (and, in some cases, the acquisition may be immediately accretive assuming synergies), including entering new geographic and frac sand product markets, acquiring attractive customer contracts and improving operations. On August 16, 2016, we completed our acquisition of NBI, the ultimate parent company of NBR Sand, LLC, a regional sand producer located near Tyler, Texas. On August 22, 2016, we completed the acquisition of Sandbox, a provider of logistics solutions and technology for the transportation of proppant used in hydraulic fracturing in the oil and gas industry. On August 16, 2017, we completed our acquisition of MS Sand, a frac sand mining and logistics company based in St. Louis, Missouri. We are in active discussions to acquire additional assets fitting this strategy, which, if completed, could be "significant" under Regulation S-X and could require additional sources of financing. There can be no assurance that we will reach a definitive agreement and complete any of these potential transactions. See the risk factors disclosed in Item 1A of Part I of our 2017 Annual Report on Form 10-K, including the risk factor entitled, "If we cannot

successfully complete acquisitions or integrate acquired businesses, our growth may be limited and our financial condition may be adversely affected.”

- **Maintain financial strength and flexibility.** We intend to maintain financial strength and flexibility to enable us to better manage through industry downturns and pursue acquisitions and new growth opportunities as they arise. As of September 30, 2018, we had \$345.6 million of cash on hand and \$95.2 million of availability under our revolving credit facility (the "Revolver").

How We Generate Our Sales

Products

We derive our product sales by mining and processing minerals that our customers purchase for various uses. Our product sales are primarily a function of the price per ton and the number of tons sold. We primarily sell our products through individual purchase orders executed under short-term price agreements or at prevailing market rates. The amount invoiced reflects product, transportation and / or additional handling services as applicable, such as storage, transloading the product from railcars to trucks and last mile logistics to the customer site. We invoice most of our product customers on a per shipment basis, although for some larger customers, we consolidate invoices weekly or monthly. Standard collection terms are net 30 days, although extended terms are offered in competitive situations.

Service

We derive our service revenues primarily through the provision of transportation, equipment rental, and contract labor services to companies in the oil and gas industry. Transportation services typically consist of transporting customer proppant from storage facilities to proximal well-sites and are contracted through work orders executed under established pricing agreements. The amount invoiced reflects transportation services rendered. Equipment rental services provide customers with use of either dedicated or nonspecific wellhead proppant delivery equipment solutions for contractual periods defined either through formal lease agreements or executed work orders under established pricing agreements. The amounts invoiced reflect the length of time the equipment set was utilized in the billing period. Contract labor services provide customers with proppant delivery equipment operators through work orders executed under established pricing agreements. The amounts invoiced reflect the amount of time our labor services were utilized in the billing period. We typically invoice our customers on a weekly or monthly basis; however, some customers receive invoices upon well-site operation completion. Standard collection terms are net 30 days, although extended terms are offered in competitive situations.

Our ten largest customers accounted for approximately 48% and 50% of total sales during the nine months ended September 30, 2018 and 2017, respectively. Sales to one of our customers accounted for 15% of our total sales during the nine months ended September 30, 2018. Sales to two of our customers accounted for 11% and 10% of our total sales during the nine months ended September 30, 2017. No other customers accounted for 10% or more of our total sales. At September 30, 2018, one of our customers' accounts receivable represented 19% of our total accounts receivable, net of allowance. At December 31, 2017, two of our customers' accounts receivable represented 19% and 11% of our total accounts receivable, net of allowance. No other customers accounted for 10% or more of our total accounts receivable.

For a limited number of customers, we sell under long-term, minimum purchase supply agreements. These agreements define, among other commitments, the volume of product that our customers must purchase, the volume of product that we must provide and the price that we will charge and that our customers will pay for each product. Prices under these agreements are generally fixed and subject to certain contractual adjustments. Sometimes these agreements may undergo negotiations regarding pricing and volume requirements, which may often occur in volatile market conditions. While these negotiations continue, we may deliver sand at prices or at volumes below the requirements in our existing supply agreements. We do not consider these agreements solely representative of contracts with customers. An executed order specifying the type and quantity of product to be delivered, in combination with the noted agreements, comprise our contracts in these arrangements. Selling more tons under supply contracts enables us to be more efficient from a production, supply chain and logistics standpoint. As discussed in Part I, Item 1A., "Risk Factors, of our 2017 Annual Report on Form 10-K—"A large portion of our sales is generated by our top ten customers, and the loss of, or significant reduction in, purchases by our largest customers could adversely affect our operations," these customers may not continue to purchase the same levels of product in the future due to a variety of reasons, contract requirements notwithstanding.

As of September 30, 2018, we have twenty-four minimum purchase supply agreements in the Oil & Gas Proppants segment with initial terms expiring between 2018 and 2034. As of September 30, 2017, we had ten minimum purchase supply agreements in the Oil & Gas Proppants segment with initial terms expiring between 2018 and 2020. Collectively, sales to customers with minimum purchase supply agreements accounted for 54% and 28% of Oil & Gas Proppants segment sales during the nine months ended September 30, 2018 and 2017, respectively. Although sales under minimum purchase supply agreements may result in us realizing lower margins than we otherwise might during periods of high market prices, we believe

such lower margins are offset by the benefits derived from the product mix and sales volume stability afforded by such supply agreements, which helps us lower market risk arising from adverse changes in spot prices and market conditions.

In the industrial and specialty end markets we have not historically entered into long term minimum purchase supply agreements with our customers because of the high cost to our customers of switching providers. We may periodically do so when capital or other investment is required to meet customer needs. Instead, we often enter into supply agreements with our customers with targeted volumes and terms of one to five years. Prices under these agreements are generally fixed and subject to annual increases.

The Costs of Conducting Our Business

The principal expenses involved in conducting our business are transportation costs, labor costs, electricity and drying fuel costs, and maintenance and repair costs for our mining and processing equipment and facilities. Transportation and related costs include freight charges, fuel surcharges, transloading fees, switching fees, railcar lease costs, demurrage costs, storage fees and labor costs. We believe the majority of our operating costs are relatively stable in price, but can vary significantly based on the volume of product produced. We benefit from owning the majority of the mineral deposits that we mine and having long-term mineral rights leases or supply agreements for our other primary sources of raw material, which limit royalty payments.

Additionally, we incur expenses related to our corporate operations, including costs for sales and marketing; research and development; and finance, legal, environmental, health and safety functions of our organization. These costs are principally driven by personnel expenses.

How We Evaluate Our Business

Our management team evaluates our business using a variety of financial and operational metrics. Our business is organized into two segments, Oil & Gas Proppants and Industrial & Specialty Products. We evaluate the performance of these segments based on their tons sold, average selling price and contribution margin earned. Additionally, we consider a number of factors in evaluating the performance of the business as a whole, including total tons sold, average selling price, segment contribution margin, and Adjusted EBITDA. We view these metrics as important factors in evaluating our profitability and review these measurements frequently to analyze trends and make decisions.

Segment Contribution Margin

Segment contribution margin, a non-GAAP measure, is a key metric that management uses to evaluate our operating performance and to determine resource allocation between segments. Segment contribution margin excludes certain corporate costs not associated with the operations of the segment. These unallocated costs include costs that are related to corporate functional areas such as operations management, corporate purchasing, accounting, treasury, information technology, legal and human resources.

Segment contribution margin is not a measure of our financial performance under GAAP and should not be considered an alternative to measures derived in accordance with GAAP. For more details on the reconciliation of segment contribution margin to its most directly comparable GAAP financial measure, net income, see Note U - Segment Reporting to our Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

Adjusted EBITDA

Adjusted EBITDA, a non-GAAP measure, is included in this report because it is a key metric used by management to assess our operating performance and by our lenders to evaluate our covenant compliance. Adjusted EBITDA excludes certain income and/or costs, the removal of which improves comparability of operating results across reporting periods. Our target performance goals under our incentive compensation plan are tied, in part, to our Adjusted EBITDA.

Adjusted EBITDA is not a measure of our financial performance or liquidity under GAAP and should not be considered as an alternative to net income as a measure of operating performance, cash flows from operating activities as a measure of liquidity or any other performance measure derived in accordance with GAAP. Additionally, Adjusted EBITDA is not intended to be a measure of free cash flow for management's discretionary use, as it does not consider certain cash requirements such as interest payments, tax payments and debt service requirements. Adjusted EBITDA contains certain other limitations, including the failure to reflect our cash expenditures, cash requirements for working capital needs and cash costs to replace assets being depreciated and amortized, and excludes certain non-recurring charges that may recur in the future. Management compensates for these limitations by relying primarily on our GAAP results and by using Adjusted EBITDA only supplementally. Our measure of Adjusted EBITDA is not necessarily comparable to other similarly titled captions of other companies due to potential inconsistencies in the methods of calculation.

The following table sets forth a reconciliation of net income, the most directly comparable GAAP financial measure, to Adjusted EBITDA.

(All amounts in thousands)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income attributable to U.S. Silica Holdings, Inc.	\$ 6,316	\$ 41,273	\$ 55,254	\$ 73,254
Total interest expense, net of interest income	20,899	6,900	43,243	19,852
Provision for taxes	(1,547)	14,707	8,806	20,103
Total depreciation, depletion and amortization expenses	37,150	24,673	102,305	69,898
EBITDA	62,818	87,553	209,608	183,107
Non-cash incentive compensation ⁽¹⁾	5,427	6,567	18,612	18,520
Post-employment expenses (excluding service costs) ⁽²⁾	544	194	1,653	923
Merger and acquisition related expenses ⁽³⁾	8,303	2,387	28,434	4,824
Plant capacity expansion expenses ⁽⁴⁾	24,999	1	45,100	3
Contract termination expenses ⁽⁵⁾	—	—	—	325
Asset impairment ⁽⁶⁾	—	—	16,184	—
Business optimization projects ⁽⁷⁾	1,926	—	1,926	—
Other adjustments allowable under our existing credit agreement ⁽⁸⁾	1,525	(26)	3,001	6,758
Adjusted EBITDA	\$ 105,542	\$ 96,676	\$ 324,518	\$ 214,460

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- (1) Reflects equity-based non-cash compensation expense.
 - (2) Includes net pension cost and net post-retirement cost relating to pension and other post-retirement benefit obligations during the applicable period, but in each case excluding the service cost relating to benefits earned during such period. Non-service net periodic benefit costs are not considered reflective of our operating performance as these costs do not exclusively originate from employee services during the applicable period and may experience periodic fluctuations as a result of changes in non-operating factors, including changes in discount rates, changes in expected returns on benefit plan assets, and other demographic actuarial assumptions. See Note P - Pension and Post-Retirement Benefits to our Financial Statements in Part 1, Item 1 of this Quarterly Report on Form 10-Q.
 - (3) Merger and acquisition related expenses include legal fees, consulting fees, bank fees, severance costs, certain purchase accounting items, inventory write-offs, information technology integration costs and similar charges. While these costs are not operational in nature and are not expected to continue for any singular transaction on an ongoing basis, similar types of costs, expenses and charges have occurred in prior periods and may recur in the future as we continue to integrate prior acquisitions and pursue any future acquisitions.
 - (4) Plant capacity expansion expenses include expenses that are not inventoriable or capitalizable as related to plant expansion projects greater than \$5 million in capital expenditures or plant start up projects. While these expenses are not operational in nature and are not expected to continue for any singular project on an ongoing basis, similar types of expenses have occurred in prior periods and may recur in the future as we continue to pursue future plant capacity expansion.
 - (5) Reflects contract termination expenses related to strategically exiting a service contract. While these expenses are not operational in nature and are not expected to continue for any singular event on an ongoing basis, similar types of expenses have occurred in prior periods and may recur in the future as we continue to strategically evaluate our contracts.
 - (6) The nine months ended September 30, 2018 reflects a \$16.2 million asset impairment related to the closure of our resin coating facility and associated product portfolio during the first quarter of 2018.
 - (7) Reflects costs incurred related to business optimization projects within our corporate center, which aim to measure and improve the efficiency, productivity and performance of our organization. While these costs are not operational in nature and are not expected to continue for any singular project on an ongoing basis, similar types of expenses may recur in the future.
 - (8) Reflects miscellaneous adjustments permitted under our existing credit agreement. The three months ended September 30, 2018 includes storm damage costs, recruiting fees and relocation costs. The nine months ended September 30, 2018 also includes a net loss of \$0.7 million on divestiture of assets, consisting of \$5.2 million of contract termination costs and \$1.3 million of divestiture related expenses such as legal fees and consulting fees, partially offset by a \$5.8 million gain on sale of assets. The nine months ended September 30, 2017 amount includes a contract restructuring cost of \$6.3 million. While the gain and these types of costs are not operational in nature and are not expected to continue for any singular event on an ongoing basis, similar types of expenses have occurred in prior periods and may recur in the future.

Adjusted EBITDA-trailing twelve months

Our Revolver contains a consolidated total net leverage ratio that we must meet as of the last day of any fiscal quarter whenever usage of the Revolver (other than certain undrawn letters of credit) exceeds 30% of the Revolver commitment, which is calculated based on our Adjusted EBITDA-trailing twelve months. Noncompliance with the financial ratio covenant contained in the Revolver could result in the acceleration of our obligations to repay all amounts outstanding under the Revolver and the Term Loan. Moreover, the Revolver and the Term Loan contain covenants that restrict, subject to certain exceptions, our ability to make permitted acquisitions, incur additional indebtedness, make restricted payments (including dividends) and retain excess cash flow based, in some cases, on our ability to meet leverage ratios calculated based on our Adjusted EBITDA-trailing twelve months.

Adjusted EBITDA-trailing twelve months is not a measure of our financial performance or liquidity under GAAP and should not be considered as an alternative to net income as a measure of operating performance, cash flows from operating activities as a measure of liquidity or any other performance measure derived in accordance with GAAP. Additionally, Adjusted EBITDA-trailing twelve months is not intended to be a measure of free cash flow for management's discretionary use, as it does not consider certain cash requirements such as interest payments, tax payments and debt service requirements. Adjusted EBITDA-trailing twelve months contains certain other limitations, including the failure to reflect our cash expenditures, cash requirements for working capital needs and cash costs to replace assets being depreciated and amortized, and excludes certain non-recurring charges. Management compensates for these limitations by relying primarily on our GAAP results and by using Adjusted EBITDA-trailing twelve months only supplementally. Our measure of Adjusted EBITDA-trailing twelve months is not necessarily comparable to other similarly titled captions of other companies due to potential inconsistencies in the methods of calculation.

As of September 30, 2018, we are in compliance with all covenants in accordance with our Revolver and Term Loan. The Revolver and Term Loan require us to maintain a consolidated leverage ratio of no more than 3.75:1.00 as of the last day of any fiscal quarter whenever usage of the Revolver (other than certain undrawn letters of credit) exceeds 30% of the Revolver commitment. As of September 30, 2018, our Revolver usage was zero (other than certain undrawn letters of credit). Since the Revolver usage did not exceed 30% of the Revolver commitment, the consolidated leverage ratio covenant did not apply. The calculation of the consolidated leverage ratio incorporates the Adjusted EBITDA-trailing twelve months as follows:

<i>(All amounts in thousands)</i>	September 30, 2018
Total debt	\$ 1,264,008
Capital leases	524
Total consolidated debt	<u>\$ 1,264,532</u>
Adjusted EBITDA-trailing twelve months	\$ 417,759
Pro forma Adjusted EBITDA of acquisitions ⁽¹⁾	31,918
Other adjustments for covenant calculation ⁽²⁾	271
Total Adjusted EBITDA-trailing twelve months for covenant calculation	<u>\$ 449,948</u>
Consolidated leverage ratio	2.81

(1) Covenant calculation allows for the Adjusted EBITDA-trailing twelve months to include the impact of acquisitions on a pro forma basis.

(2) Covenant calculation excludes activity at legal entities above the operating company, which is mainly interest income offset by public company operating expenses.

Results of Operations for the Three Months Ended September 30, 2018 and 2017

Sales

(All numbers in thousands except per ton data)

	Three Months Ended September 30,		Percent Change
	2018	2017	'18 vs. '17
Sales:			
Oil & Gas Proppants	\$ 302,452	\$ 286,369	6 %
Industrial & Specialty Products	120,720	58,654	106 %
Total sales	\$ 423,172	\$ 345,023	23 %
Tons:			
Oil & Gas Proppants	3,821	3,147	21 %
Industrial & Specialty Products	983	928	6 %
Total Tons	4,804	4,075	18 %
Average Selling Price per Ton:			
Oil & Gas Proppants	\$ 79.16	\$ 91.00	(13)%
Industrial & Specialty Products	122.81	63.20	94 %
Overall Average Selling Price per Ton	\$ 88.09	\$ 84.67	4 %

Total sales increased 23% for the three months ended September 30, 2018 compared to the three months ended September 30, 2017, driven by an 18% increase in total tons sold and a 4% increase in overall average selling price. Tons sold in-basin represented 52% and 51% of total company tons sold for the three months ended September 30, 2018 and 2017, respectively.

The increase in total sales was partly driven by Oil & Gas Proppants sales, which increased 6% for the three months ended September 30, 2018 compared to the three months ended September 30, 2017. Oil & Gas Proppants tons sold increased 21% and average selling price decreased 13%. The increase in tons sold was driven by year over year growth in demand for our frac sand and for our Sandbox last mile logistics solution, as well as the acquisition of MS Sand. The decrease in average selling price was mainly driven by more tons sold from in-basin plants, increased proppant supply, and decreased sand pricing.

The increase in total sales was mainly driven by Industrial & Specialty Products sales, which increased 106% for the three months ended September 30, 2018 compared to the three months ended September 30, 2017. Industrial & Specialty Products tons sold increased 6% and average selling price increased 94%. The increase in tons sold was due to the acquisition of EPM and additional business with existing customers. The increase in average selling price was due to the acquisition of EPM, additional higher-margin product sales and price increases.

Cost of Sales

Cost of sales increased by \$94.5 million, or 42%, to \$322.3 million for the three months ended September 30, 2018 compared to \$227.8 million for the three months ended September 30, 2017. These changes result from the main components of cost of sales as discussed below. As a percentage of sales, cost of sales represented 76% for the three months ended September 30, 2018 compared to 66% for the same period in 2017, mainly due to plant capacity expansion expenses.

We incurred \$145.3 million and \$133.2 million of transportation and related costs for the three months ended September 30, 2018 and 2017, respectively. This increase was mainly due to incremental costs related to Sandbox operations. As a percentage of sales, transportation and related costs decreased to 34% for the three months ended September 30, 2018 compared to 39% for the same period in 2017.

We incurred \$53.6 million and \$34.9 million of operating labor costs for the three months ended September 30, 2018 and 2017, respectively. The \$18.7 million increase in labor costs incurred was due to more tons sold, incremental costs related to Sandbox operations, and the acquisition of EPM. As a percentage of sales, operating labor costs represented 13% for the three months ended September 30, 2018 compared to 10% for the same period in 2017.

We incurred \$15.8 million and \$8.7 million of electricity and drying fuel (principally natural gas) costs for the three months ended September 30, 2018 and 2017, respectively. The \$7.0 million increase in electricity and drying fuel costs

incurred was due to more tons sold and the acquisition of EPM. As a percentage of sales, electricity and drying fuel costs represented 4% for the three months ended September 30, 2018 compared to 3% for the same period in 2017.

We incurred \$36.8 million and \$15.1 million of maintenance and repair costs for the three months ended September 30, 2018 and 2017, respectively. The increase in maintenance and repair costs incurred was due to plant capacity expansion expenses, higher production volume, incremental costs related to Sandbox and the acquisition of EPM. As a percentage of sales, maintenance and repair costs represented 9% for the three months ended September 30, 2018 compared to 4% for the same period in 2017.

Segment Contribution Margin

Oil & Gas Proppants contribution margin decreased by \$6.5 million to \$89.6 million for the three months ended September 30, 2018 compared to \$96.1 million for the three months ended September 30, 2017, driven by a \$16.1 million increase in revenue, offset by \$22.6 million in higher cost of sales. The decrease in segment contribution margin was mainly driven by decreased sand pricing.

Industrial & Specialty Products contribution margin increased by \$24.7 million, or 103%, to \$48.7 million for the three months ended September 30, 2018 compared to \$24.0 million for the three months ended September 30, 2017, driven by a \$62.1 million increase in revenue, partially offset by \$37.3 million in higher cost of sales. The increase in segment contribution margin was due to the acquisition of EPM as well as additional business with existing customers, new higher-margin product sales and price increases.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased by \$8.4 million, or 29%, to \$38.0 million for the three months ended September 30, 2018 compared to \$29.5 million for the three months ended September 30, 2017. The increase was due to the following factors:

- Compensation related expense increased by \$5.2 million for the three months ended September 30, 2018 compared to the three months ended September 30, 2017, due to the acquisition of EPM, higher employee headcount, and increased equity-based compensation.
- Merger and acquisition related expense increased by \$0.9 million to \$1.9 million for the three months ended September 30, 2018 compared to \$1.0 million for the three months ended September 30, 2017. The increase was mainly due to costs related to the evaluation of business acquisitions.
- Business optimization project expenses within our corporate center, which aim to measure and improve the efficiency, productivity and performance of our organization, were \$1.9 million for the three months ended September 30, 2018.

In total, our selling, general and administrative costs represented approximately 9% of our sales for both the three months ended September 30, 2018 and 2017.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization expense increased by \$12.5 million, or 51%, to \$37.2 million for the three months ended September 30, 2018 compared to \$24.7 million for the three months ended September 30, 2017. The increase was mainly driven by our plant capacity expansions and our acquisitions, including the acquisition of EPM, as well as other continued capital spending. Depreciation, depletion and amortization costs represented approximately 9% and 7% of our sales for the three months ended September 30, 2018 and 2017, respectively.

Operating Income

Operating income decreased by \$37.3 million to \$25.7 million for the three months ended September 30, 2018 compared to \$63.0 million for the three months ended September 30, 2017. The decrease was driven by a 23% increase in total sales, offset by a 42% increase in cost of sales, a 29% increase in selling, general and administrative expense and a 51% increase in depreciation, depletion and amortization expense.

Interest Expense

Interest expense increased by \$13.7 million, or 164%, to \$22.0 million for the three months ended September 30, 2018 compared to \$8.3 million for the three months ended September 30, 2017, mainly driven by the increase in our new credit facility to finance the acquisition of EPM.

Provision for Income Taxes

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. Because ASC 740-10-25-47 requires the effect of a change in tax laws or rates to be recognized as of the date of enactment, we are required to adjust deferred tax assets and liabilities as of December 22, 2017. Accordingly, we recorded a deferred income tax benefit of \$35.8 million for the year ended December 31, 2017.

For the three months ended September 30, 2018 and 2017, we recorded a tax expense of zero and \$0.1 million, respectively, related to equity compensation pursuant to ASU 2016-09.

Income tax expense decreased by \$16.3 million to a \$1.5 million income tax benefit for the three months ended September 30, 2018 compared to \$14.7 million in income tax expense for the three months ended September 30, 2017. The decrease was mainly due to decreased profit before income tax during the three months ended September 30, 2018. The effective tax rate was (32)% and 26% for the three months ended September 30, 2018 and 2017, respectively. The effective tax rate for the three months ended September 30, 2018 and 2017 would have been (52)% and 26%, respectively, without the discrete tax items. With reduced profits mainly driven by decreased sand pricing, we updated our estimated annual effective tax rate to 11%. Our tax benefit in the period represented the cumulative adjustment to reflect the updated estimated annual effective tax rate partially offset by the discrete tax items. Because of the updated tax rate and cumulative adjustment in the period, the (32)% tax rate is not representative of future tax rates. See accompanying Note R - Income Taxes of our Financial Statements for more information.

Historically, our actual effective tax rates have differed from the statutory effective rate primarily due to the benefit received from statutory percentage depletion allowances. The deduction for statutory percentage depletion does not necessarily change proportionately to changes in income before income taxes.

Net Income

Net income was \$6.3 million for the three months ended September 30, 2018 compared to a net income of \$41.3 million for the three months ended September 30, 2017. The year over year change was due to the factors noted above.

Results of Operations for the Nine Months Ended September 30, 2018 and 2017

Sales

(All numbers in thousands except per ton data)

	Nine Months Ended September 30,		Percent Change
	2018	2017	'18 vs. '17
Sales:			
Oil & Gas Proppants	\$ 939,445	\$ 714,345	32%
Industrial & Specialty Products	280,473	165,940	69%
Total sales	\$ 1,219,918	\$ 880,285	39%
Tons:			
Oil & Gas Proppants	10,537	8,424	25%
Industrial & Specialty Products	2,885	2,682	8%
Total Tons	13,422	11,106	21%
Average Selling Price per Ton:			
Oil & Gas Proppants	\$ 89.16	\$ 84.80	5%
Industrial & Specialty Products	97.22	61.87	57%
Overall Average Selling Price per Ton	\$ 90.89	\$ 79.26	15%

Total sales increased 39% for the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, driven by a 21% increase in total tons sold and a 15% increase in overall average selling price. Tons sold in-basin represented 52% and 49% of total company tons sold for the nine months ended September 30, 2018 and 2017, respectively.

The increase in total sales was partly driven by Oil & Gas Proppants sales, which increased 32% for the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017. Oil & Gas Proppants tons sold increased 25% and average selling price increased 5%. These increases were driven by year over year growth in demand for our frac sand and for our Sandbox last mile logistics solution, as well as the acquisition of MS Sand.

The increase in total sales was also driven by Industrial & Specialty Products sales, which increased 69% for the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017. Industrial & Specialty Products tons sold increased 8% and average selling price increased 57%. The increase in tons sold was due to the acquisition of EPM and additional business with existing customers. The increase in average selling price was due to the acquisition of EPM, additional higher-margin product sales and price increases.

Cost of Sales

Cost of sales increased by \$263.8 million, or 43%, to \$876.1 million for the nine months ended September 30, 2018 compared to \$612.3 million for the nine months ended September 30, 2017. These changes result from the main components of cost of sales as discussed below. As a percentage of sales, cost of sales represented 72% for the nine months ended September 30, 2018 compared to 70% for the same period in 2017, mainly due to plant capacity expansion expenses.

We incurred \$417.7 million and \$349.6 million of transportation and related costs for the nine months ended September 30, 2018 and 2017, respectively. This increase was due to increased tons sold through our transloads and incremental costs related to Sandbox operations. As a percentage of sales, transportation and related costs decreased to 34% for the nine months ended September 30, 2018 compared to 40% for the same period in 2017.

We incurred \$143.7 million and \$96.8 million of operating labor costs for the nine months ended September 30, 2018 and 2017, respectively. The \$46.9 million increase in labor costs incurred was due to more tons sold, incremental costs related to Sandbox operations and the acquisition of EPM. As a percentage of sales, operating labor costs represented 12% for the nine months ended September 30, 2018 compared to 11% for the same period in 2017.

We incurred \$36.5 million and \$26.1 million of electricity and drying fuel (principally natural gas) costs for the nine months ended September 30, 2018 and 2017, respectively. The \$10.4 million increase in electricity and drying fuel costs incurred was due to more tons sold and the acquisition of EPM. As a percentage of sales, electricity and drying fuel costs represented 3% for both the nine months ended September 30, 2018 and 2017.

We incurred \$81.0 million and \$42.9 million of maintenance and repair costs for the nine months ended September 30, 2018 and 2017, respectively. The increase in maintenance and repair costs incurred was due to plant capacity expansion expenses, higher production volume, incremental costs related to Sandbox and the acquisition of EPM. As a percentage of sales, maintenance and repair costs represented 7% for the nine months ended September 30, 2018 compared to 5% for the same period in 2017.

Segment Contribution Margin

Oil & Gas Proppants contribution margin increased by \$97.4 million to \$303.6 million for the nine months ended September 30, 2018 compared to \$206.1 million for the nine months ended September 30, 2017, driven by a \$225.1 million increase in revenue, partially offset by \$127.7 million in higher cost of sales. The increase in segment contribution margin was driven by year over year growth in demand for our frac sand and for our Sandbox last mile logistics solution, as well as the acquisition of MS Sand, partly offset by lower sand pricing.

Industrial & Specialty Products contribution margin increased by \$43.1 million, or 64%, to \$110.5 million for the nine months ended September 30, 2018 compared to \$67.5 million for the nine months ended September 30, 2017, driven by a \$114.5 million increase in revenue, partially offset by \$71.5 million in higher cost of sales. The increase in segment contribution margin was due to the acquisition of EPM as well as additional business with existing customers, new higher-margin product sales and price increases.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased by \$37.3 million, or 48%, to \$114.8 million for the nine months ended September 30, 2018 compared to \$77.6 million for the nine months ended September 30, 2017. The increase was due to the following factors:

- Compensation related expense increased by \$19.3 million for the nine months ended September 30, 2018 compared to the nine months ended September 30, 2017, due to the acquisition of EPM, higher employee headcount, and increased equity-based compensation.
- Merger and acquisition related expense increased by \$10.2 million to \$13.3 million for the nine months ended September 30, 2018 compared to \$3.1 million for the nine months ended September 30, 2017. The increase was mainly due to costs related to the acquisition of EPM.
- Business optimization project expenses within our corporate center, which aim to measure and improve the efficiency, productivity and performance of our organization, were \$1.9 million for the nine months ended September 30, 2018.
- A net loss of \$0.7 million on divestiture of assets, consisting of \$5.2 million of contract termination costs and \$1.3 million of divestiture related expenses such as legal fees and consulting fees, partially offset by a \$5.8 million gain on sale of assets during the first quarter of 2018.

In total, our selling, general and administrative costs represented approximately 9% of our sales for both the nine months ended September 30, 2018 and 2017.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization expense increased by \$32.4 million, or 46%, to \$102.3 million for the nine months ended September 30, 2018 compared to \$69.9 million for the nine months ended September 30, 2017. The increase was mainly driven by our plant capacity expansions and our acquisitions, including the acquisition of EPM, as well as other continued capital spending. Depreciation, depletion and amortization costs represented approximately 8% of our sales for both the nine months ended September 30, 2018 and 2017.

Asset Impairment

During the nine months ended September 30, 2018, we recorded a \$16.2 million asset impairment related to the closure of our resin coating facility and associated product portfolio.

Operating Income

Operating income decreased by \$10.0 million to \$110.5 million for the nine months ended September 30, 2018 compared to \$120.5 million for the nine months ended September 30, 2017. The decrease was driven by a 39% increase in total sales, offset by a 43% increase in cost of sales, a 48% increase in selling, general and administrative expense and a 46% increase in depreciation, depletion and amortization expense.

Interest Expense

Interest expense increased by \$25.2 million, or 105%, to \$49.3 million for the nine months ended September 30, 2018 compared to \$24.1 million for the nine months ended September 30, 2017, mainly driven by an increase in our new credit facility to finance the acquisition of EPM, including a \$1.1 million write-off of capitalized debt issuance costs relating to the previously existing senior debt.

Other Income (Expense), net, including interest income

Other income increased by \$5.9 million, or 191%, to \$2.8 million for the nine months ended September 30, 2018 compared to \$3.1 million in other expense for the nine months ended September 30, 2017. The increase was mainly due to the prior year containing contract restructuring costs.

Provision for Income Taxes

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act reduces the corporate tax rate to 21 percent, effective January 1, 2018. Because ASC 740-10-25-47 requires the effect of a change in tax laws or rates to be recognized as of the date of enactment, we are

required to adjust deferred tax assets and liabilities as of December 22, 2017. Accordingly, we recorded a deferred income tax benefit of \$35.8 million for the year ended December 31, 2017.

For the nine months ended September 30, 2018 and 2017, we recorded a tax expense of \$0.7 million and \$1.8 million, respectively, related to equity compensation pursuant to ASU 2016-09.

Income tax expense decreased by \$11.3 million to \$8.8 million for the nine months ended September 30, 2018 compared to \$20.1 million in income tax expense for the nine months ended September 30, 2017. The decrease was mainly due to decreased profit before income tax during the nine months ended September 30, 2018. The effective tax rate was 14% and 22% for the nine months ended September 30, 2018 and 2017. The effective tax rate for the nine months ended September 30, 2018 and 2017 would have been 11% and 23%, respectively, without the discrete tax items. See accompanying Note R - Income Taxes of our Financial Statements for more information.

Historically, our actual effective tax rates have differed from the statutory effective rate primarily due to the benefit received from statutory percentage depletion allowances. The deduction for statutory percentage depletion does not necessarily change proportionately to changes in income before income taxes.

Net Income

Net income was \$55.3 million for the nine months ended September 30, 2018 compared to a net income of \$73.3 million for the nine months ended September 30, 2017. The year over year change was due to the factors noted above.

Liquidity and Capital Resources

Overview

Our principal liquidity requirements have historically been to service our debt, to meet our working capital, capital expenditure and mine development expenditure needs, to return cash to our stockholders, and to finance acquisitions. We have historically met our liquidity and capital investment needs with funds generated through operations. We have historically funded our acquisitions through cash on hand or borrowings under our credit facilities and equity issuances. Our working capital is the amount by which current assets exceed current liabilities and is a measure of our ability to pay our liabilities as they become due. As of September 30, 2018, our working capital was \$500.1 million and we had \$95.2 million of availability under the Revolver.

In connection with the EPMH acquisition, on May 1, 2018, we entered into the Third Amended and Restated Credit Agreement (the "Credit Agreement"). The Credit Agreement increases our existing senior debt by entering into a new \$1.380 billion senior secured credit facility, consisting of a \$1.280 billion term loan and a \$100 million revolving credit facility that may also be used for swingline loans or letters of credit, and we may elect to increase the term loan in accordance with the terms of the Credit Agreement. For more details on the new Credit Agreement see accompanying Note I - Debt to our Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

We believe that cash on hand, cash generated through operations and cash generated from financing arrangements will be sufficient to meet working capital requirements, anticipated capital expenditures, scheduled debt payments and any dividends declared for at least the next 12 months.

Management and our Board remain committed to evaluating additional ways of creating shareholder value. Any determination to pay dividends and other distributions in cash, stock, or property in the future will be at the discretion of our Board and will be dependent on then-existing conditions, including our business conditions, our financial condition, results of operations, liquidity, capital requirements, contractual restrictions including restrictive covenants contained in debt agreements, and other factors. Additionally, because we are a holding company, our ability to pay dividends on our common stock may be limited by restrictions on the ability of our subsidiaries to pay dividends or make distributions to us, including restrictions under the terms of the agreements governing our indebtedness.

Cash Flow Analysis

A summary of operating, investing and financing activities (in thousands) is shown in the following table:

	Nine Months Ended September 30,	
	2018	2017
Net cash provided by (used in):		
Operating activities	\$ 267,690	\$ 160,861
Investing activities	(944,852)	(383,550)
Financing activities	638,178	(24,886)

Net Cash Provided by / Used in Operating Activities

Operating activities consist primarily of net income adjusted for certain non-cash and working capital items. Adjustments to net income for non-cash items include depreciation, depletion and amortization, deferred revenue, deferred income taxes, equity-based compensation and bad debt provision. In addition, operating cash flows include the effect of changes in operating assets and liabilities, principally accounts receivable, inventories, prepaid expenses and other current assets, income taxes payable and receivable, accounts payable and accrued expenses.

Net cash provided by operating activities was \$267.7 million for the nine months ended September 30, 2018. This was mainly due to \$55.3 million in net income adjusted for non-cash items, including \$102.3 million in depreciation, depletion and amortization, \$16.2 million asset impairment related to the closure of our resin coating facility and associated product portfolio, \$7.7 million in deferred income taxes, \$18.6 million in equity-based compensation, \$16.6 million in deferred revenue, \$5.4 million mainly related to the gain on sale of three transload facilities, and \$9.7 million in other miscellaneous non-cash items. Also, contributing to the change was an \$8.2 million decrease in accounts receivable, a \$2.7 million decrease in inventories, a \$3.1 million increase in prepaid expenses and other current assets, a \$4.4 million decrease in income taxes, a \$27.9 million increase in accounts payable and accrued liabilities, \$54.6 million in short-term and long-term vendor incentives, and \$6.1 million in other operating assets and liabilities.

Net cash provided by operating activities was \$160.9 million for the nine months ended September 30, 2017. This was mainly due to \$73.3 million in net income adjusted for non-cash items, including \$69.9 million in depreciation, depletion and amortization, \$10.1 million in deferred income taxes, \$18.5 million in equity-based compensation, \$32.5 million in deferred revenue, and \$6.8 million in other miscellaneous non-cash items; partially offset by a \$106.1 million increase in accounts receivable, a \$7.4 million decrease in prepaid expenses and other current assets, a \$40.6 million increase in accounts payable and accrued liabilities, a \$9.7 million increase in income taxes, and \$1.3 million in other operating assets and liabilities.

Net Cash Provided by / Used in Investing Activities

Investing activities consist primarily of cash consideration paid to acquire businesses and capital expenditures for growth and maintenance.

Net cash used in investing activities was \$944.9 million for the nine months ended September 30, 2018. This was mainly due to capital expenditures of \$220.8 million and cash consideration of \$743.3 million paid for the EPMH acquisition, partially offset by proceeds from the sale of three transload facilities of \$26.3 million. Capital expenditures for the nine months ended September 30, 2018 were mainly for engineering, procurement and construction of our growth, primarily Crane and Lamesa, equipment to expand our Sandbox operations, and other maintenance and cost improvement capital projects.

Net cash used in investing activities was \$383.6 million for the nine months ended September 30, 2017. This was mainly due to capital expenditures of \$261.2 million, cash consideration of \$119.7 million paid for the acquisition of businesses, and capitalized intellectual costs of \$2.6 million. Capital expenditures for the nine months ended September 30, 2017 were approximately \$49.6 million for a purchase of reserves in Lamesa, Texas, \$94.4 million for a purchase of reserves in Crane County, Texas, and \$117.2 million for engineering, procurement and construction of our growth projects and other maintenance and cost improvement capital projects.

Subject to our continuing evaluation of market conditions, we anticipate that our capital expenditures in 2018 will be approximately \$350 million, which is primarily associated with previously announced growth projects and other maintenance and cost improvement capital projects. We expect to fund our capital expenditures through cash on our balance sheet, cash generated from our operations and cash generated from financing activities.

Net Cash Provided by / Used in Financing Activities

Financing activities consist primarily of equity issuances, dividend payments, share repurchases, borrowings and repayments related to the Revolver, Term Loan, as well as fees and expenses paid in connection with our credit facilities.

Net cash provided by financing activities was \$638.2 million for the nine months ended September 30, 2018. This was mainly due to \$1.280 billion of proceeds from long-term debt borrowings and \$37.3 million of fees paid to finance the EPMH acquisition, \$497.7 million of long-term debt payments, \$90.5 million of common stock repurchases, \$15.1 million of dividends paid, \$4.2 million of tax payments related to shares withheld for vested restricted stock and stock units, and a \$3.2 million capital contribution from a non-controlling interest.

Net cash used in financing activities was \$24.9 million for the nine months ended September 30, 2017. This was due to \$15.3 million of dividends paid, \$3.9 million of tax payments related to shares withheld for vested restricted stock and stock units, \$5.6 million of long-term debt payments, and \$0.9 million of capital lease repayments, partially offset by \$0.8 million of proceeds from employee stock options exercised.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements that have a current material effect or are likely to have a future material effect on our financial condition, changes in financial condition, sales, expenses, results of operations, liquidity, capital expenditures or capital resources.

Contractual Obligations

There have been no significant changes outside the ordinary course of business to our “Contractual Obligations” table in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” of our 2017 Annual Report. For more details on future minimum annual commitments under operating leases, see accompanying Note O - Commitments and Contingencies to our Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

Environmental Matters

We are subject to various federal, state and local laws and regulations governing, among other things, hazardous materials, air and water emissions, environmental contamination and reclamation and the protection of the environment and natural resources. We have made, and expect to make in the future, expenditures to comply with such laws and regulations, but cannot predict the full amount of such future expenditures. As of September 30, 2018, we had \$20.1 million accrued for future reclamation costs, as compared to \$19.0 million as of December 31, 2017.

We discuss certain environmental matters relating to our various production and other facilities, certain regulatory requirements relating to human exposure to crystalline silica and our mining activity and how such matters may affect our business in the future under Item 1, “Business,” Item 1A, “Risk Factors” Item 3, “Legal Proceedings”, and Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Environmental Matters” in our 2017 Annual Report.

Critical Accounting Estimates

Our unaudited condensed consolidated financial statements have been prepared in conformity with GAAP, which requires management to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of our financial statements and the reported amounts of revenues and expenses during the reporting period. While we do not believe that the reported amounts would be materially different, application of these policies involves the exercise of judgment and the use of assumptions as to future uncertainties and, as a result, actual results could differ from these estimates. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on experience and on various other assumptions that are believed to be reasonable under the circumstances. All of our significant accounting policies, including certain critical accounting policies and estimates, are disclosed in our 2017 Annual Report.

Recent Accounting Pronouncements

New accounting guidance that we have recently adopted, as well as accounting guidance that has been recently issued but not yet adopted by us, are included in Note A - Summary of Significant Accounting Policies to our Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

Availability of Reports; Website Access; Other Information

Our internet address is <http://www.ussilica.com>. Through “Investors”—“SEC Filings” on our home page, we make available free of charge our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q, our proxy statements, our Current Reports on Form 8-K, SEC Forms 3, 4 and 5 and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Our reports filed with the SEC are also made available to read and copy at the SEC’s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information about the Public Reference Room may be obtained by contacting the SEC at 1-800-SEC-0330. Reports filed with the SEC are also made available on its website at www.sec.gov.

Copies of our Corporate Governance Guidelines, our Audit Committee Charter, Compensation Committee Charter, and Nominating and Governance Committee Charter, the Code of Conduct for our Board and Code of Conduct and Ethics for our employees (including our chief executive officer, chief financial officer and corporate controller) can also be found on our website. We will disclose any amendments or waivers to our Code of Conduct and Ethics applicable to the chief executive officer, chief financial officer and corporate controller in the “Investors” section of our website. Stockholders may also request a free copy of these documents from: U.S. Silica Holdings, Inc., attn.: Investor Relations, 8490 Progress Drive, Suite 300, Frederick, Maryland 21701 or view them on our website at IR@ussilica.com.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk

We are exposed to certain market risks, which exist as a part of our ongoing business operations. Such risks arise from adverse changes in market rates, prices and conditions. We address such market risks in "How We Generate Our Sales" in Item 2 of this Quarterly Report on Form 10-Q, Management's Discussion and Analysis of Financial Condition and Results of Operations.

Interest Rate Risk

We are exposed to interest rate risk arising from adverse changes in interest rates. In connection with the acquisition of EPMH on May 1, 2018, we entered into a new Credit Agreement. The Credit Agreement increases our existing senior debt by entering into a new \$1.380 billion senior secured credit facility, consisting of a \$1.280 billion term loan and a \$100 million revolving credit facility that may also be used for swingline loans or letters of credit, and we may elect to increase the term loan in accordance with the terms set forth in the Credit Agreement. As of September 30, 2018, we had \$1.274 billion of debt outstanding under our senior credit facility. Assuming LIBOR is greater than the 1.0% minimum base rate on the Term Loan, a hypothetical increase in interest rates by 1.0% would have changed our interest expense by \$12.7 million per year.

We use interest rate derivatives in the normal course of our business to manage both our interest cost and the risks associated with changing interest rates. We do not use derivatives for trading or speculative purposes. As of September 30, 2018 the fair value of our interest rate swaps was \$0.4 million and \$0.2 million and classified within other long-term assets on our balance sheet. The fair value of our interest rate cap was zero. At December 31, 2017, the fair value of our interest rate cap was zero. Additional disclosures for derivative instruments are presented in Note M - Derivative Instruments to the Financial Statements.

Credit Risk

We are subject to risks of loss resulting from nonpayment or nonperformance by our customers. We examine the creditworthiness of third-party customers to whom we extend credit and manage our exposure to credit risk through credit analysis, credit approval, credit limits and monitoring procedures, and for certain transactions, we may request letters of credit, prepayments or guarantees, although collateral is generally not required.

Despite enhancing our examination of our customers' credit worthiness, we may still experience delays or failures in customer payments. Some of our customers have reported experiencing financial difficulties. With respect to customers that may file for bankruptcy protection, we may not be able to collect sums owed to us by these customers and we also may be required to refund pre-petition amounts paid to us during the preference period (typically 90 days) prior to the bankruptcy filing.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of September 30, 2018. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Based on the evaluation of our disclosure controls and procedures as of September 30, 2018, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, and not absolute, assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act during the quarter ended September 30, 2018 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting, except as noted below.

We acquired the ultimate parent company of EP Minerals, LLC (“EPM”) on May 1, 2018. We anticipate excluding the internal control over financial reporting of EPM from the evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2018. This decision is based upon the significance of EPM and the timing of integration efforts underway to transition EPM’s processes, information technology systems and other components of internal control over financial reporting to our internal control structure. We have expanded our consolidation and disclosure controls and procedures to include EPM, and we continue to assess the current internal control over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

In addition to the matter described below, we are subject to various legal proceedings, claims, and governmental inspections, audits or investigations arising out of our business which cover matters such as general commercial, governmental regulations, antitrust and trade regulations, product liability, environmental, intellectual property, employment and other actions. Although the outcomes of these routine claims cannot be predicted with certainty, in the opinion of management, the ultimate resolution of these matters will not have a material adverse effect on our financial position or results of operations.

Prolonged inhalation of excessive levels of respirable crystalline silica dust can result in silicosis, a disease of the lungs. Breathing large amounts of respirable silica dust over time may injure a person's lungs by causing scar tissue to form. Crystalline silica in the form of quartz is a basic component of soil, sand, granite and most other types of rock. Cutting, breaking, crushing, drilling, grinding and abrasive blasting of or with crystalline silica containing materials can produce fine silica dust, the inhalation of which may cause silicosis, lung cancer and possibly other diseases including immune system disorders such as scleroderma. Sources of exposure to respirable crystalline silica dust include sandblasting, foundry manufacturing, crushing and drilling of rock, masonry and concrete work, mining and tunneling, and cement and asphalt pavement manufacturing.

Since at least 1975, we and/or our predecessors have been named as a defendant, usually among many defendants, in numerous lawsuits brought by or on behalf of current or former employees of our customers alleging damages caused by silica exposure. Prior to 2001, the number of silicosis lawsuits filed annually against the commercial silica industry remained relatively stable and was generally below 100, but between 2001 and 2004 the number of silicosis lawsuits filed against the commercial silica industry substantially increased. This increase led to greater scrutiny of the nature of the claims filed, and in June 2005 the U.S. District Court for the Southern District of Texas issued an opinion in the former federal silica multi-district litigation remanding almost all of the 10,000 cases then pending in the multi-district litigation back to the state courts from which they originated for further review and medical qualification, leading to a number of silicosis case dismissals across the United States. In conjunction with this and other favorable court rulings establishing "sophisticated user" and "no duty to warn" defenses for silica producers, several states, including Texas, Ohio and Florida, have passed medical criteria legislation that requires proof of actual impairment before a lawsuit can be filed.

As a result of the above developments, the filing rate of new claims against us over the past few years has decreased to below pre-2001 levels, and we were named as a defendant in zero, two, and zero new silicosis cases filed in 2015, 2016 and 2017, respectively. During the nine months ended September 30, 2018, three new claims were brought against U.S. Silica. As of September 30, 2018, there were 58 active silica-related products liability claims pending in which U.S. Silica is a defendant. Almost all of the claims pending against us arise out of the alleged use of our silica products in foundries or as an abrasive blast media, and involve various other defendants. Prior to the fourth quarter of 2012, we had insurance policies for both our predecessors that cover certain claims for alleged silica exposure for periods prior to certain dates in 1985 and 1986 (with respect to certain insurance). As a result of a settlement with a former owner and its insurers in the fourth quarter of 2012, some of these policies are no longer available to us and we will not seek reimbursement for any defense costs or claim payments from these policies. Other insurance policies, however, continue to remain available to us and will continue to make such payments on our behalf.

The silica-related litigation brought against us to date has not resulted in material liability to us. However, we continue to have silica-related products liability claims filed against us, including claims that allege silica exposure for periods for which we do not have insurance coverage. Any such pending or future claims or inadequacies of our insurance coverage could have a material adverse effect on our business, reputation or results of operations. For more information regarding silica-related litigation, see Part I, Item 1A of our 2017 Annual Report "Risk Factors—Risks Related to Environmental, Mining and Other Regulation—Silica-related health issues and litigation could have a material adverse effect on our business, reputation or results of operations."

ITEM 1A. RISK FACTORS

As of September 30, 2018, there have been no material changes to the risk factors disclosed in Item 1A of Part I in our 2017 Annual Report.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Share Repurchase Program

The following table presents the total number of shares of our common stock that we purchased during the third quarter of 2018, the average price paid per share, the number of shares that we purchased as part of our publicly announced repurchase program, and the approximate dollar value of shares that still could have been purchased at the end of the applicable fiscal period pursuant to our share repurchase program:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Program ⁽¹⁾	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Program ⁽¹⁾
July 1, 2018 - July 31, 2018	328 ⁽²⁾	\$ 26.26	—	\$ 184,500,060
August 1, 2018 - August 31, 2018	405 ⁽²⁾	\$ 23.10	—	\$ 184,500,060
September 1, 2018 - September 30, 2018	205 ⁽²⁾	\$ 20.78	—	\$ 184,500,060
Total	938	\$ 23.70	—	

(1) In May 2018, our Board of Directors authorized the repurchase of up to \$200 million of our common stock.

(2) Shares withheld by U.S. Silica to pay taxes due upon the vesting of employee restricted stock and restricted stock units.

From September 30, 2018 to the date of the filing of this Quarterly Report on Form 10-Q, we have not repurchased any shares of our common stock except in connection with the vesting of employee restricted stock and restricted stock units.

For more details on the stock repurchase program, see Note C - Capital Structure and Accumulated Comprehensive Income to our Financial Statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Safety is one of our core values and we strive for excellence in the achievement of a workplace free of injuries and occupational illnesses. Our health and safety leadership team has developed comprehensive safety policies and standards, which include detailed standards and procedures for safe production, addressing topics such as employee training, risk management, workplace inspection, emergency response, accident investigation and program auditing. We place special emphasis on the importance of continuous improvement in occupational health, personal injury avoidance and prevention, emergency preparedness, and property damage elimination. In addition to strong leadership and involvement from all levels of the organization, these programs and procedures form the cornerstone of our safety initiatives, ensuring that employees are provided a safe and healthy environment and are intended as a means to reduce workplace accidents, incidents and losses, comply with all mining-related regulations and provide support for both regulators and the industry to improve mine safety.

While we want to have productive operations in full regulatory compliance, we know it is equally essential that we motivate and train our people to think, practice and feel a personal responsibility for health and safety on and off the job.

All of our production facilities, with the exception of our EP Minerals, Blair, NE, facility, are classified as mines and are subject to regulation by the Federal Mine Safety and Health Administration ("MSHA") under the Federal Mine Safety and Health Act of 1977 (the "Mine Act"). MSHA inspects our mines on a regular basis and issues various citations and orders when it believes a violation has occurred under the Mine Act. Following passage of The Mine Improvement and New Emergency Response Act of 2006, MSHA significantly increased the numbers of citations and orders charged against mining operations. The dollar penalties assessed for citations issued has also increased in recent years. Information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K (17 CFR 229.104) is included in Exhibit 95.1 to this Quarterly Report filed on Form 10-Q.

ITEM 5. OTHER INFORMATION

Forward Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements that are subject to risks and uncertainties. All statements other than statements of historical fact included in this Quarterly Report on Form 10-Q are forward-looking statements. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "project," "plan," "intend," "believe," "may," "will," "should," "can have," "likely" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events. For example, all statements we make relating to our estimated and projected costs, expenditures, cash flows, growth rates and financial results, our plans and objectives for future operations, growth or initiatives, strategies or the expected outcome or impact of pending or threatened litigation are forward-looking statements. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected, including:

- fluctuations in demand for commercial silica;
- the cyclical nature of our customers' businesses;
- operating risks that are beyond our control, such as changes in the price and availability of transportation, natural gas or electricity; unusual or unexpected geological formations or pressures; cave-ins, pit wall failures or rock falls; or unanticipated ground, grade or water conditions;
- our dependence on five of our plants for a significant portion of our sales;
- the level of activity in the natural gas and oil industries;
- decreased demand for frac sand or the development of either effective alternative proppants or new processes to replace hydraulic fracturing;
- federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing and the potential for related regulatory action or litigation affecting our customers' operations;
- our rights and ability to mine our properties and our renewal or receipt of the required permits and approvals from governmental authorities and other third parties;
- our ability to implement our capacity expansion plans within our current timetable and budget and our ability to secure demand for our increased production capacity, and the actual operating costs once we have completed the capacity expansion;
- our ability to succeed in competitive markets;
- loss of, or reduction in, business from our largest customers;
- increasing costs or a lack of dependability or availability of transportation services and transload network access or infrastructure;
- extensive regulation of trucking services;

- our ability to recruit and retain truckload drivers;
- increases in the prices of, or interruptions in the supply of, natural gas and electricity, or any other energy sources;
- increases in the price of diesel fuel;
- diminished access to water;
- our ability to successfully complete acquisitions or integrate acquired businesses;
- our ability to make capital expenditures to maintain, develop and increase our asset base and our ability to obtain needed capital or financing on satisfactory terms;
- our substantial indebtedness and pension obligations;
- restrictions imposed by our indebtedness on our current and future operations;
- contractual obligations that require us to deliver minimum amounts of frac sand or purchase minimum amounts of services;
- the accuracy of our estimates of mineral reserves and resource deposits;
- a shortage of skilled labor and rising costs in the mining industry;
- our ability to attract and retain key personnel;
- our ability to maintain satisfactory labor relations;
- our reliance on patents, trade secrets and contractual restrictions to protect our proprietary rights;
- our significant unfunded pension obligations and post-retirement health care liabilities;
- our ability to maintain effective quality control systems at our mining, processing and production facilities;
- seasonal and severe weather conditions;
- fluctuations in our sales and results of operations due to seasonality and other factors;
- interruptions or failures in our information technology systems;
- the impact of a terrorist attack or armed conflict;
- extensive and evolving environmental, mining, health and safety, licensing, reclamation and other regulation (and changes in their enforcement or interpretation);
- silica-related health issues and corresponding litigation;
- our ability to acquire, maintain or renew financial assurances related to the reclamation and restoration of mining property; and
- other factors included and disclosed in Part I, Item 1A, “Risk Factors” of our 2017 Annual Report.

We derive many of our forward-looking statements from our operating budgets and forecasts, which are based on many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Important factors that could cause actual results to differ materially from our expectations, or cautionary statements, are disclosed under Item 1A, “Risk Factors” and Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our 2017 Annual Report. All written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by these cautionary statements as well as other cautionary statements that are made from time to time in our other filings with the SEC, including this Quarterly Report on Form 10-Q, and public communications. You should evaluate all forward-looking statements made in this Quarterly Report on Form 10-Q in the context of these risks and uncertainties.

We caution you that the important factors referenced above may not contain all of the factors that are important to you. In addition, we cannot assure you that we will realize the results or developments we expect or anticipate or, even if substantially realized, that they will result in the consequences or affect us or our operations in the way we expect. The forward-looking statements included in this Quarterly Report on Form 10-Q are made only as of the date hereof. We undertake no obligation to update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

ITEM 6. EXHIBITS

The information called for by this Item is incorporated herein by reference from the Exhibit Index included in this Quarterly Report on Form 10-Q.

SIGNATURES

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, this 23rd day of October, 2018.

U.S. Silica Holdings, Inc.

/s/ DONALD A. MERRIL

Name: Donald A. Merrill

Title: Chief Financial Officer

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>	<u>Filing Date</u>
<u>31.1*</u>	<u>Rule 13a-14(a)/15(d)-14(a) Certification by Bryan A. Shinn, Chief Executive Officer.</u>				
<u>31.2*</u>	<u>Rule 13a-14(a)/15(d)-14(a) Certification by Donald A. Merrill, Chief Financial Officer.</u>				
<u>32.1*</u>	<u>Section 1350 Certification by Bryan A. Shinn, Chief Executive Officer.</u>				
<u>32.2*</u>	<u>Section 1350 Certification by Donald A. Merrill, Chief Financial Officer.</u>				
<u>95.1*</u>	<u>Mine Safety Disclosure</u>				
<u>99.1*</u>	<u>Consent of Rystad Energy</u>				
101*	101.INS XBRL Instance				
	101.SCH XBRL Taxonomy Extension Schema				
	101.CAL XBRL Taxonomy Extension Calculation				
	101.LAB XBRL Taxonomy Extension Labels				
	101.PRE XBRL Taxonomy Extension Presentation				
	101.DEF XBRL Taxonomy Extension Definition				

+ Management contract or compensatory plan/arrangement

* Filed herewith

We will furnish any of our stockholders a copy of any of the above Exhibits not included herein upon the written request of such stockholder and the payment to U.S. Silica Holdings, Inc. of the reasonable expenses incurred in furnishing such copy or copies.

CERTIFICATION

I, Bryan A. Shinn, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of U.S. Silica Holdings, Inc. (the “Company”) for the quarter ended September 30, 2018;
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.

Dated: October 23, 2018

/s/ BRYAN A. SHINN

Name: Bryan A. Shinn

Title: Chief Executive Officer

CERTIFICATION

I, Donald A. Merrill, certify that:

1. I have reviewed this quarterly report on Form 10-Q of U.S. Silica Holdings, Inc. (the “Company”) for the quarter ended September 30, 2018;
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.

Dated: October 23, 2018

/s/ DONALD A. MERRIL

Name: Donald A. Merrill

Title: Chief Financial Officer

SECTION 1350 CERTIFICATION

I, Bryan A. Shinn, Chief Executive Officer, U.S. Silica Holdings, Inc. (the "Company"), hereby certify, on the date hereof, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

- i. The Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- ii. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: October 23, 2018

/s/ BRYAN A. SHINN

Name: Bryan A. Shinn

Title: Chief Executive Officer

A signed copy of this original statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff on request.

SECTION 1350 CERTIFICATION

I, Donald A. Merrill, Chief Financial Officer, U.S. Silica Holdings, Inc. (the "Company"), hereby certify, on the date hereof, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

- i. The Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- ii. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: October 23, 2018

/s/ DONALD A. MERRIL

Name: Donald A. Merrill

Title: Chief Financial Officer

A signed copy of this original statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff on request.

Mine Safety Disclosure

The following disclosures are provided pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Act”) and Item 104 of Regulation S-K, which requires certain disclosures by companies required to file periodic reports under the Securities Exchange Act of 1934, as amended, that operate mines regulated under the Federal Mine Safety and Health Act of 1977 (the “Mine Act”).

Mine Safety Information. Whenever the Federal Mine Safety and Health Administration (“MSHA”) believes a violation of the Mine Act, any health or safety standard or any regulation has occurred, it may issue a citation which describes the alleged violation and fixes a time within which the U.S. mining operator must abate the alleged violation. In some situations, such as when MSHA believes that conditions pose a hazard to miners, MSHA may issue an order removing miners from the area of the mine affected by the condition until the alleged hazards are corrected. When MSHA issues a citation or order, it generally proposes a civil penalty, or fine, as a result of the alleged violation, that the operator is ordered to pay. Citations and orders can be contested and appealed, and as part of that process, are often reduced in severity and amount, and are sometimes dismissed. The number of citations, orders and proposed assessments vary depending on the size and type (underground or surface) of the mine as well as by the MSHA inspector(s) assigned.

Mine Safety Data. The following provides additional information about references used in the table below to describe the categories of violations, orders or citations issued by MSHA under the Mine Act:

- *Section 104 S&S Citations:* Citations received from MSHA under section 104 of the Mine Act for violations of mandatory health or safety standards that could significantly and substantially contribute to the cause and effect of a mine safety or health hazard.
- *Section 104(b) Orders:* Orders issued by MSHA under section 104(b) of the Mine Act, which represents a failure to abate a citation under section 104(a) within the period of time prescribed by MSHA. This results in an order of immediate withdrawal from the area of the mine affected by the condition until MSHA determines that the violation has been abated.
- *Section 104(d) Citations and Orders:* Citations and orders issued by MSHA under section 104(d) of the Mine Act for unwarrantable failure to comply with mandatory health or safety standards.
- *Section 110(b)(2) Violations:* Flagrant violations issued by MSHA under section 110(b)(2) of the Mine Act.
- *Section 107(a) Orders:* Orders issued by MSHA under section 107(a) of the Mine Act for situations in which MSHA determined an “imminent danger” (as defined by MSHA) existed.

The following table details the violations, citations and orders issued to us by MSHA during the quarter ended September 30, 2018:

Mine(a)	Section 104 S&S Citations(#)	Section 104(b) Orders (#)	Section 104(d) Citations and Orders (#)	Section 110(b)(2) Violations (#)	Section 107(a) Orders (#)	Proposed Assessments(b) (\$, amounts in dollars)	Mining Related Fatalities (#)
Ottawa, IL	1	—	—	—	—	\$ —	—
Mill Creek, OK	—	—	—	—	—	—	—
Pacific, MO	—	—	—	—	—	—	—
Berkeley Springs, WV	—	—	—	—	—	—	—
Mapleton Depot, PA	—	—	—	—	—	—	—
Kosse, TX	2	—	—	—	—	3,700	—
Mauricetown, NJ	—	—	—	—	—	—	—
Columbia, SC	—	—	—	—	—	—	—
Montpelier, VA	1	—	—	—	—	—	—
Rockwood, MI	1	—	—	—	—	—	—
Jackson, TN	—	—	—	—	—	—	—
Dubberly, LA	—	—	—	—	—	—	—
Hurtsboro, AL	—	—	—	—	—	—	—
Sparta, WI	—	—	—	—	—	—	—
Voca, TX	1	—	—	—	—	—	—
Peru, IL	4	—	—	—	—	1,297	—
Utica, IL	—	—	—	—	—	—	—
Tyler, TX	—	—	—	—	—	—	—
Festus, MO	—	—	—	—	—	—	—
Seagraves, TX	—	—	—	—	—	—	—
Lamesa, TX	3	—	—	—	—	—	—
Crane County, TX	3	—	—	—	1	—	—
Jackson, MS	—	—	—	—	—	—	—
Middletown, TN	—	—	—	—	—	—	—
Clark, NV	2	—	—	—	—	—	—
Lovelock, NV	3	—	—	—	—	3,009	—
Fernley, NV	—	—	—	—	—	—	—
Vale, OR	—	—	—	—	—	—	—
Fowlkes Mine, MS	—	—	—	—	—	—	—
Hazen Mine, NV	—	—	—	—	—	—	—
Popcorn Mine, NV	—	—	—	—	—	—	—
Colado Mine, NV	—	—	—	—	—	118	—
Celaton Mine, OR	—	—	—	—	—	—	—
Cheot Mine - AZ	—	—	—	—	—	—	—

(a) The definition of mine under section 3 of the Mine Act includes the mine, as well as other items used in, or to be used in, or resulting from, the work of extracting minerals, such as land, structures, facilities, equipment, machines, tools and minerals preparation facilities. Unless otherwise indicated, any of these other items associated with a single mine have been aggregated in the totals for that mine. MSHA assigns an identification number to each mine and may or may not assign separate identification numbers to related facilities such as preparation facilities. We are providing the information in the table by mine rather than MSHA identification number because that is how we manage and operate our mining

business and we believe this presentation will be more useful to investors than providing information based on MSHA identification numbers.

- (b) Represents the total dollar value of proposed assessments from MSHA under the Mine Act relating to any type of citation or order issued during the quarter ended September 30, 2018.

Pattern or Potential Pattern of Violations. During the quarter ended September 30, 2018, none of the mines operated by us received written notice from MSHA of (a) a pattern of violations of mandatory health or safety standards that are of such nature as could have significantly and substantially contributed to the cause and effect of mine health or safety hazards under section 104(e) of the Mine Act or (b) the potential to have such a pattern.

Pending Legal Actions. There were 100 legal actions pending before the Federal Mine Safety and Health Review Commission (the Commission) as of September 30, 2018, each of which is a contest proceeding filed by us to challenge a citation or order issued by MSHA under the Mine Act and includes 45 contests challenging Section 104 S&S citations. During the quarter ended September 30, 2018, 21 legal actions were instituted and 2 legal actions were resolved. The Commission is an independent adjudicative agency established by the Mine Act that provides administrative trial and appellate review of legal disputes arising under the Mine Act.

CONSENT OF RYSTAD ENERGY.

We hereby consent to the references to our company's name in the Quarterly Report on Form 10-Q for the Quarterly Period Ended September 30, 2018 (the "Quarterly Report") of U.S. Silica Holdings, Inc. (the "Company") and the quotation by the Company of our Proppant Market report - 4Q 2018, published on September 11, 2018. We also hereby consent to the filing of this letter as an exhibit to the Quarterly Report.

RYSTAD ENERGY

By: /s/ Nick Livingstone

Name: Nick Livingstone

Title: Managing Director

October 23, 2018