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 June 30, 2020
or

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

For the transition period from to

Commission File Number: 001-37822

Advanced Emissions Solutions, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**27-5472457**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
8051 E. Maplewood Ave, Suite 210, Greenwood Village, CO	**80111**
(Address of principal executive offices)	(Zip Code)

(720) 598-3500
(Registrant's telephone number, including area code)

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

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

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

Class	Trading Symbol	Name of each exchange on which registered
Common stock, par value $0.001 per share	ADES	NASDAQ Global Market

As of August 1, 2020, there were 18,558,907 outstanding shares of Advanced Emissions Solutions, Inc. common stock, par value $0.001 per share.

INDEX

Part I. – FINANCIAL INFORMATION

Item 1. Consolidated Financial Statements

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(Unaudited)

(in thousands, except share data)	As of June 30, 2020	As of December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 16,733	$ 12,080
Receivables, net	5,319	7,430
Receivables, related parties	3,480	4,246
Inventories, net	16,084	15,460
Prepaid expenses and other assets	18,959	7,832
Total current assets	60,575	47,048
Restricted cash, long-term	5,000	5,000
Property, plant and equipment, net of accumulated depreciation of $6,597 and $7,444, respectively	26,053	44,001
Intangible assets, net	2,293	4,169
Equity method investments	23,080	39,155
Deferred tax assets, net	2,448	14,095
Other long-term assets, net	13,881	20,331
Total Assets	$ 133,330	$ 173,799
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 7,174	$ 8,046
Accrued payroll and related liabilities	3,158	3,024
Current portion of long-term debt	25,583	23,932
Other current liabilities	3,377	4,311
Total current liabilities	39,292	39,313
Long-term debt, net of current portion	10,120	20,434
Other long-term liabilities	4,816	5,760
Total Liabilities	54,228	65,507
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Preferred stock: par value of $.001 per share, 50,000,000 shares authorized, none outstanding	—	—
Common stock: par value of $.001 per share, 100,000,000 shares authorized, 23,110,285 and 22,960,157 shares issued, and 18,492,139 and 18,362,624 shares outstanding at June 30, 2020 and December 31, 2019, respectively	23	23
Treasury stock, at cost: 4,618,146 and 4,597,533 shares as of June 30, 2020 and December 31, 2019, respectively	(47,692)	(47,533)
Additional paid-in capital	99,732	98,466
Retained earnings	27,039	57,336
Total stockholders' equity	79,102	108,292
Total Liabilities and Stockholders' Equity	$ 133,330	$ 173,799

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations
(Unaudited)

(in thousands, except per share data)	Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Revenues:				
Consumables	$ 8,170	$ 11,386	$ 17,387	$ 26,495
License royalties, related party	3,313	4,191	6,359	8,411
Total revenues	11,483	15,577	23,746	34,906
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	7,416	12,286	18,907	26,394
Other sales cost of revenue, exclusive of depreciation and amortization	—	6	—	6
Payroll and benefits	3,812	2,798	6,554	5,354
Legal and professional fees	1,022	1,995	3,065	4,199
General and administrative	2,462	1,995	4,793	3,909
Depreciation, amortization, depletion and accretion	1,733	757	4,030	2,859
Impairment of long-lived assets	26,103	—	26,103	—
Total operating expenses	42,548	19,837	63,452	42,721
Operating loss	(31,065)	(4,260)	(39,706)	(7,815)
Other income (expense):				
Earnings from equity method investments	8,168	20,935	16,441	42,625
Interest expense	(962)	(1,987)	(2,172)	(4,091)
Other	148	60	191	130
Total other income	7,354	19,008	14,460	38,664
(Loss) income before income tax expense	(23,711)	14,748	(25,246)	30,849
Income tax expense	103	6,634	461	8,333
Net (loss) income	$ (23,814)	$ 8,114	$ (25,707)	$ 22,516
Earnings per common share (Note 1):				
Basic	$ (1.32)	$ 0.45	$ (1.43)	$ 1.23
Diluted	$ (1.32)	$ 0.44	$ (1.43)	$ 1.22
Weighted-average number of common shares outstanding:				
Basic	18,014	18,172	17,974	18,219
Diluted	18,014	18,377	17,974	18,412

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Changes in Stockholders' Equity
(Unaudited)

	Common Stock		Treasury Stock				
(Amounts in thousands, except share data)	**Shares**	**Amount**	**Shares**	**Amount**	**Additional Paid-in Capital**	**Retained Earnings**	**Total Stockholders' Equity**
Balances, January 1, 2020	22,960,157	$ 23	(4,597,533)	$(47,533)	$ 98,466	$ 57,336	$ 108,292
Stock-based compensation	218,259	—	—	—	506	—	506
Repurchase of common shares to satisfy minimum tax withholdings	(64,198)	—	—	—	(376)	—	(376)
Cash dividends declared on common stock	—	—	—	—	—	(4,590)	(4,590)
Repurchase of common shares	—	—	(20,613)	(159)	—	—	(159)
Net loss	—	—	—	—	—	(1,893)	(1,893)
Balances, March 31, 2020	23,114,218	$ 23	(4,618,146)	$(47,692)	$ 98,596	$ 50,853	$ 101,780
Stock-based compensation	(3,549)	—	—	—	1,138	—	1,138
Repurchase of common shares to satisfy minimum tax withholdings	(384)	—	—	—	(2)	—	(2)
Net loss	—	—	—	—	—	(23,814)	(23,814)
Balances, June 30, 2020	23,110,285	$ 23	(4,618,146)	$(47,692)	$ 99,732	$ 27,039	$ 79,102

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Changes in Stockholders' Equity
(Unaudited)

(Amounts in thousands, except share data)	Common Stock Shares	Common Stock Amount	Treasury Stock Shares	Treasury Stock Amount	Additional Paid-in Capital	Retained Earnings	Total Stockholders' Equity
Balances, January 1, 2019	22,640,677	$ 23	(4,064,188)	$(41,740)	$ 96,750	$ 12,914	$ 67,947
Cumulative effect of change in accounting principle (Note 1)	—	—	—	—	—	28,817	28,817
Stock-based compensation	218,465	—	—	—	317	—	317
Repurchase of common shares to satisfy minimum tax withholdings	(22,707)	—	—	—	(245)	—	(245)
Cash dividends declared on common stock	—	—	—	—	—	(4,629)	(4,629)
Repurchase of common shares	—	—	(63,876)	(693)	—	—	(693)
Net income	—	—	—	—	—	14,402	14,402
Balances, March 31, 2019	22,836,435	$ 23	(4,128,064)	$(42,433)	$ 96,822	$ 51,504	$ 105,916
Stock-based compensation	31,715	—	—	—	541	—	541
Repurchase of common shares to satisfy minimum tax withholdings	(745)	—	—	—	(9)	—	(9)
Cash dividends declared on common stock	—	—	—	—	—	(4,663)	(4,663)
Repurchase of common shares	—	—	(184,715)	(2,138)	—	—	(2,138)
Net income	—	—	—	—	—	8,114	8,114
Balances, June 30, 2019	22,867,405	$ 23	(4,312,779)	$(44,571)	$ 97,354	$ 54,955	$ 107,761

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(Unaudited)

(in thousands)	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019
Cash flows from operating activities		
Net (loss) income	$ (25,707)	$ 22,516
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Deferred income tax expense	11,647	4,946
Depreciation, amortization, depletion and accretion	4,030	2,859
Impairment of long-lived assets	26,103	—
Operating lease expense	1,353	1,580
Amortization of debt discount and debt issuance costs	709	851
Stock-based compensation expense	1,644	858
Earnings from equity method investments	(16,441)	(42,625)
Other non-cash items, net	31	474
Changes in operating assets and liabilities:		
Receivables and related party receivables	2,854	4,044
Prepaid expenses and other assets	(11,129)	47
Inventories, net	(590)	3,794
Other long-term assets, net	(224)	(110)
Accounts payable	(1,095)	(758)
Accrued payroll and related liabilities	134	(4,829)
Other current liabilities	(515)	862
Operating lease liabilities	(1,213)	(1,563)
Other long-term liabilities	(22)	(462)
Distributions from equity method investees, return on investment	32,516	38,088
Net cash provided by operating activities	24,085	30,572
Cash flows from investing activities		
Acquisition of business	—	(661)
Acquisition of property, plant, equipment, and intangible assets, net	(4,189)	(3,797)
Mine development costs	(507)	(521)
Net cash used in investing activities	(4,696)	(4,979)
Cash flows from financing activities		
Principal payments on term loan	(12,000)	(16,000)
Principal payments on finance lease obligations	(676)	(681)
Dividends paid	(4,828)	(9,179)
Repurchase of common shares	(159)	(2,831)
Repurchase of common shares to satisfy tax withholdings	(378)	(254)
Borrowings from Paycheck Protection Program Loan	3,305	—
Net cash used in financing activities	(14,736)	(28,945)
Increase (decrease) in Cash and Cash Equivalents and Restricted Cash	4,653	(3,352)
Cash and Cash Equivalents and Restricted Cash, beginning of period	17,080	23,772
Cash and Cash Equivalents and Restricted Cash, end of period	$ 21,733	$ 20,420
Supplemental disclosure of non-cash investing and financing activities:		
Acquisition of property, plant and equipment through accounts payable	$ 223	$ 1,561
Dividends payable	$ 77	$ 113

See Notes to the Condensed Consolidated Financial Statements.

Note 1 - Basis of Presentation

Nature of Operations

Advanced Emissions Solutions, Inc. ("ADES" or the "Company") is a Delaware corporation with its principal office located in Greenwood Village, Colorado and operations located in Louisiana. The Company is principally engaged in consumable mercury control options including powdered activated carbon ("PAC") and chemical technologies. The Company's proprietary environmental technologies in the power generation and industrial ("PGI") market enable customers to reduce emissions of mercury and other pollutants, maximize utilization levels and improve operating efficiencies to meet the challenges of existing and pending emission control regulations. Through its wholly-owned subsidiary, ADA Carbon Solutions, LLC ("Carbon Solutions"), which the Company acquired on December 7, 2018 (the "Acquisition Date"), the Company manufactures and sells activated carbon ("AC") used in mercury capture for the coal-fired power plant, industrial and water treatment markets. Carbon Solutions also owns an associated lignite mine that supplies the primary raw material for manufacturing PAC.

Through its equity ownership in Tinuum Group, LLC ("Tinuum Group") and Tinuum Services, LLC ("Tinuum Services"), both of which are unconsolidated entities, the Company generates substantial earnings. Tinuum Group provides reduction of mercury and nitrogen oxide ("NOx") emissions at select coal-fired power generators through the production and sale of refined coal ("RC") that qualifies for tax credits under the Internal Revenue Code ("IRC") Section 45 - Production Tax Credit ("Section 45 tax credits"). The Company also earns royalties for technologies that are licensed to Tinuum Group and used at certain RC facilities to enhance combustion and reduced emissions of NOx and mercury from coal burned to generate electrical power. Tinuum Services operates and maintains the RC facilities under operating and maintenance agreements with Tinuum Group and owners or lessees of the RC facilities.

The Company’s sales occur principally in the United States. See Note 15 for additional information regarding the Company's operating segments.

Basis of Presentation

The accompanying Condensed Consolidated Financial Statements of ADES are unaudited and have been prepared in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") and with Article 10 of Regulation S-X of the Securities and Exchange Commission. In compliance with those instructions, certain information and footnote disclosures normally included in annual consolidated financial statements prepared in accordance with U.S. GAAP have been condensed or omitted.

The unaudited Condensed Consolidated Financial Statements of ADES in this quarterly report ("Quarterly Report") are presented on a consolidated basis and include ADES and its wholly-owned subsidiaries (collectively, the "Company"). Also included within the unaudited Condensed Consolidated Financial Statements are the Company's unconsolidated equity investments: Tinuum Group, Tinuum Services and GWN Manager, LLC ("GWN Manager"), which are accounted for under the equity method of accounting, and Highview Enterprises Limited (the "Highview Investment"), which is accounted for in accordance with U.S. GAAP applicable to equity investments that do not qualify for the equity method of accounting.

Results of operations and cash flows for the interim periods are not necessarily indicative of the results that may be expected for the entire year. All significant intercompany transactions and accounts were eliminated in consolidation for all periods presented in this Quarterly Report.

In the opinion of management, these Condensed Consolidated Financial Statements include all normal and recurring adjustments considered necessary for a fair presentation of the results of operations, financial position, stockholders' equity and cash flows for the interim periods presented. These Condensed Consolidated Financial Statements of ADES should be read in conjunction with the Company’s Annual Report on Form 10-K for the year ended December 31, 2019 (the "2019 Form 10-K"). Significant accounting policies disclosed therein have not changed, except as described later in Note 1.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed using the two-class method, which is an earnings allocation formula that determines earnings (loss) per share for common stock and any participating securities according to dividend and participating rights in undistributed earnings (losses). The Company's restricted stock awards ("RSA's") granted prior to December 31, 2016 contain non-forfeitable rights to dividends or dividend equivalents and are deemed to be participating securities. RSA's granted subsequent to December 31, 2016 do not contain non-forfeitable rights to dividends and are not deemed to be participating securities.

Under the two-class method, net income for the period is allocated between common stockholders and the holders of the participating securities based on the weighted-average number of common shares outstanding during the period, excluding participating, unvested RSA's ("common shares"), and the weighted-average number of participating, unvested RSA's outstanding during the period, respectively. The allocated, undistributed income for the period is then divided by the weighted-average number of common shares and participating, unvested RSA's outstanding during the period to arrive at basic earnings per common share and participating security for the period, respectively. Pursuant to U.S. GAAP, the Company has elected not to separately present basic or diluted earnings per share attributable to participating securities in the Condensed Consolidated Statements of Operations.

Diluted earnings (loss) per share is computed in a manner consistent with that of basic earnings per share, while considering other potentially dilutive securities. Potentially dilutive securities consist of both unvested, participating and non-participating RSA's, as well as outstanding options to purchase common stock ("Stock Options") and contingent performance stock units ("PSU's") (collectively, "Potential dilutive shares"). The dilutive effect, if any, for non-participating RSA's, Stock Options and PSU's is determined using the greater of dilution as calculated under the treasury stock method or the two-class method. Potential dilutive shares are excluded from diluted earnings per share when their effect is anti-dilutive. When there is a net loss for a period, all Potential dilutive shares are anti-dilutive and are excluded from the calculation of diluted loss per share for that period.

The following table sets forth the calculations of basic and diluted (loss) earnings per share:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands, except per share amounts)	2020	2019	2020	2019
Net (loss) income	$ (23,814)	$ 8,114	$ (25,707)	$ 22,516
Less: Dividends and undistributed (loss) income allocated to participating securities	(17)	11	(19)	31
(Loss) income attributable to common stockholders	$ (23,797)	$ 8,103	$ (25,688)	$ 22,485
Basic weighted-average common shares outstanding	18,014	18,172	17,974	18,219
Add: dilutive effect of equity instruments	—	205	—	193
Diluted weighted-average shares outstanding	18,014	18,377	17,974	18,412
(Loss) earnings per share - basic	$ (1.32)	$ 0.45	$ (1.43)	$ 1.23
(Loss) earnings per share - diluted	$ (1.32)	$ 0.44	$ (1.43)	$ 1.22

For the three and six months ended June 30, 2020 and 2019, RSA's and Stock Options convertible to 0.7 million and 0.7 million, and 0.3 million and 0.3 million shares of common stock, respectively, were outstanding but were not included in the computation of diluted net (loss) income per share because the effect would have been anti-dilutive.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. There have been no changes in the Company's critical accounting estimates from those that were disclosed in the 2019 Form 10-K except for assumptions regarding impairment of long-lived assets. Actual results could differ from these estimates.

Due to the coronavirus ("COVID-19") pandemic, there has been uncertainty and disruption in the global economy and financial markets. Additionally, due to COVID-19, overall power generation and coal-fired power demand may change, which could also have a material adverse effect on the Company. The Company is not aware of any specific event or circumstance due to COVID-19 that would require an update to its estimate or judgments or a revision of the carrying values of its assets or liabilities through the date of this Quarterly Report. These estimates may change as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions.

Risks and Uncertainties

The Company's earnings are significantly affected by equity earnings it receives from Tinuum Group. As of June 30, 2020, Tinuum Group has 20 invested RC facilities of which 8 are leased to a single customer. A majority of these leases are periodically renewed. Further, the ability to generate Section 45 tax credits related to Tinuum's RC facilities expires in 2021. The loss of a single customer by Tinuum Group or the expiration of Section 45 tax credits would have a significant adverse impact on Tinuum Group's financial position, results of operations and cash flows, which in turn would have a material adverse impact on the Company's financial position, results of operations and cash flows.

The Company's revenues, sales volumes, earnings and cash flows are significantly affected by prices of competing power generation sources such as natural gas and renewable energy. Low natural gas prices make it a competitive alternative to coal-fired power generation and therefore, coal consumption may be reduced, which reduces the demand for our products. In addition, coal consumption and demand for our products is also affected by the demand for electricity, which is higher in the warmer and colder months of the year. Abnormal temperatures during the summer and winter months may significantly reduce coal consumption and thus the demand for the Company's products.

Reclassifications

Certain balances have been reclassified from the prior year to conform to the current year presentation. Such reclassifications had no effect on the Company's results of operations or financial position in any of the periods presented.

New Accounting Standards

Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The main objective of ASU 2016-13 is to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. To achieve this objective, the amendments in ASU 2016-13 replace the incurred loss impairment methodology in current U.S. GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. ASU 2016-13 is effective for "smaller reporting companies" (as defined by the Securities and Exchange Commission) for fiscal years beginning after December 15, 2022, including interim periods within those years, and must be adopted under a modified retrospective method approach. Entities may adopt ASU 2016-13 earlier as of the fiscal years beginning after December 15, 2018, including interim periods within those years. The Company is currently evaluating the provisions of this guidance and assessing its impact on the Company's financial statements and disclosures and does not believe this standard will have a material impact on the Company's financial statements and disclosures.

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes* ("ASU 2019-12"). The amendments in ASU 2019-12 simplify various aspects related to accounting for income taxes by removing certain exceptions contained in Topic 740 and also clarifies and amends existing guidance in Topic 740 to improve consistent application. ASU 2019-12 is effective for public business entities beginning after December 15, 2020, including interim periods within those years, and early adoption is permitted. The Company is currently evaluating the provisions of this guidance and assessing its impact on the Company's financial statements and disclosures and does not believe this standard will have a material impact on the Company's financial statements and disclosures.

Note 2 - Impairment

As part of its periodic review of the carrying value of long-lived assets, the Company assessed its long-lived assets for potential impairment. In assessing impairment of its Power Generation and Industrials ("PGI") segment's and certain other long-lived asset groups, the Company considered factors such as the significant decline in both PGI's trailing twelve months revenues and current and future years' forecasted revenues, which are largely due to the significant drop in coal-fired power dispatch that began in 2019 and is anticipated to continue in the near term largely due to the current and forecasted historical low prices of alternative power generation sources such as natural gas and an increase in supply from other competing energy sources.

The Company completed an undiscounted cash flow analysis of its PGI segment's and certain other long-lived assets (the "Asset Group"), which are comprised of its manufacturing plant and related assets and its lignite mine assets, and estimated the undiscounted cash flows from the Asset Group at $54.7 million, which was less than the carrying value of the Asset Group of $58.3 million. Accordingly, the Company completed an assessment of the Asset Group's fair value and estimated the fair value of the Asset Group at $32.2 million. This resulted in an impairment and write-down of the Asset Group of $26.1 million, which is reflected as "Impairment" in the Condensed Consolidated Statements of Operations for the three and six months ended June 30, 2020. The total impairment charge was allocated to the PGI segment and Other in the amounts of $23.2 million and $2.9 million, respectively.

The following table summarizes the allocation of the impairment and write-down of $26.1 million to the Asset Group components during the three months ended June 30, 2020:

(in thousands)		
Property, plant and equipment, net	$	18,986
Intangible assets, net		1,445
Other long-term assets, net		5,672
Total impairment	$	26,103

The Company engaged an independent third party to perform the valuation of the Asset Group in order to determine the estimated fair value of the Asset Group. This valuation was based on the use of several established valuation models including an expected future discounted cash flow model using Level 3 inputs under ASC 820 - *Fair Value Measurement.* The cash flows are those expected to be generated by market participants discounted at the risk-free rate of interest. Because of the continued future uncertainty surrounding the level of coal-fired dispatch, the impact of historically low natural gas prices and other estimates impacting the expected future cash flow, it is reasonably possible that the expected future cash flows may change in the near term and may result in the Company recording additional impairment of the Asset Group.

Note 3 - COVID-19

In response to the COVID-19 outbreak, in March 2020, the federal government passed the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"). The CARES Act provided, among other things, the creation of the Paycheck Protection Program ("PPP"), which is sponsored and administered by the U.S. Small Business Administration ("SBA").

On April 20, 2020, the Company entered into a loan (the "PPP Loan") under the PPP, evidenced by a promissory note, with BOK, NA dba Bank of Oklahoma ("BOK") providing for $3.3 million in proceeds, which was funded to the Company on April 21, 2020. The PPP Loan matures April 21, 2022 and provides for 18 monthly payments of principal and interest commencing on November 21, 2020. The interest rate on the PPP Loan is 1.00%. The PPP Loan is unsecured and contains customary events of default relating to, among other things, payment defaults, making materially false and misleading representations to the SBA or BOK, or breaching the terms of the PPP Loan. The occurrence of an event of default may result in the repayment of all amounts outstanding, collection of all amounts owing from the Company, or filing suit and obtaining judgment against the Company. The PPP Loan principal may be forgiven subject to the terms of the PPP and approval by the SBA.

The Company recorded the PPP Loan as a debt obligation under the guidance of ASC 470 - *Debt* and will accrue interest over the 18-month term of the PPP Loan beginning November 21, 2020.

The CARES Act also provided the deferral of payroll tax payments for all payroll taxes incurred through December 31, 2020. The Company has elected to defer payments of payroll taxes for the periods allowed under the CARES Act and will repay 50% by December 31, 2021 and 50% by December 31, 2022. For the three months ended June 30, 2020, total payroll tax payments deferred under the CARES Act were $0.1 million.

Note 4 - Acquisition

As described in Note 1, on the Acquisition Date, the Company completed the acquisition of Carbon Solutions (the "Carbon Solutions Acquisition") for a total purchase price of $75.0 million (the "Purchase Price"). The fair value of the purchase consideration totaled $66.5 million, less cash acquired of $3.3 million, and the assumption of debt and contractual commitments of $11.8 million. The Company also paid $4.5 million in acquisition-related costs (or transaction costs). The Company funded the cash consideration from cash on hand and the proceeds from the Term Loan and Security Agreement (the "Senior Term Loan") in the principal amount of $70.0 million, as more fully described in Note 7.

The following table summarizes the final purchase price allocation. Subsequent to the Acquisition Date, the Company completed additional analysis and adjustments were made to the preliminary purchase price allocations as noted in the table below:

Fair value of assets acquired:	**As Originally Reported**	**Adjustments**	**As Adjusted**
Cash	$ 3,284	$ —	$ 3,284
Receivables	6,409	—	6,409
Inventories	22,100	(356)	21,744
Prepaid expenses and other current assets	2,992	61	3,053
Spare parts	3,359	—	3,359
Property, plant and equipment	43,033	(377)	42,656
Mine leases and development	2,500	200	2,700
Mine reclamation asset	—	2,402	2,402
Intangible assets	4,000	100	4,100
Other assets	168	—	168
Amount attributable to assets acquired	87,845	2,030	89,875
Fair value of liabilities assumed:			
Accounts payable	4,771	—	4,771
Accrued liabilities	7,354	254	7,608
Equipment lease liabilities	8,211	—	8,211
Mine reclamation liability	626	1,776	2,402
Other liabilities	437	—	437
Amount attributable to liabilities assumed	21,399	2,030	23,429
Net assets acquired	$ 66,446	$ —	$ 66,446

Adjustments to the preliminary purchase price allocation primarily related to changes in fair values assigned to property, plant and equipment, intangible assets, mine reclamation liability and the related mine reclamation asset as a result of the final valuation report from the Company's third-party valuation firm issued in May 2019. During the three months ended June 30, 2019 based on new information of facts and circumstances that existed as of the Acquisition Date, the Company revised its estimates used as of the Acquisition Date related to the net realizable value of certain finished goods inventory items as well as values assigned to certain prepaid and accrued expense items.

The following table represents the intangible assets, as adjusted for purchase price adjustments noted above, identified as part of the Carbon Solutions Acquisition:

(in thousands)	**Amount**	**Weighted Average Useful Life (years)**
Customer relationships	$ 2,200	5
Developed technology	1,600	5
Trade name	300	2
Total intangibles acquired	$ 4,100	

Note 5 - Inventories, net

The following table summarizes the Company's inventories recorded at the lower of average cost or net realizable value as of June 30, 2020 and December 31, 2019:

	As of	
(in thousands)	June 30, 2020	December 31, 2019
Product inventory	$ 14,081	$ 13,515
Raw material inventory	2,003	1,945
	$ 16,084	$ 15,460

Note 6 - Equity Method Investments

Tinuum Group, LLC

The Company's ownership interest in Tinuum Group was 42.5% as of June 30, 2020 and December 31, 2019. Tinuum Group supplies technology equipment and technical services at select coal-fired generators, but its primary purpose is to put into operation facilities that produce and sell RC that lower emissions and also qualify for Section 45 tax credits. Tinuum Group has been determined to be a variable interest entity ("VIE"); however, the Company does not have the power to direct the activities that most significantly impact Tinuum Group's economic performance and has therefore accounted for the investment under the equity method of accounting. The Company determined that the voting partners of Tinuum Group have identical voting rights, equity control interests and board control interests, and therefore, concluded that the power to direct the activities that most significantly impact Tinuum Group's economic performance was shared.

The following table summarizes the results of operations of Tinuum Group:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Gross profit	$ 6,868	$ 38,180	$ 11,878	$ 79,380
Operating, selling, general and administrative expenses	11,919	5,763	24,695	12,345
(Loss) income from operations	(5,051)	32,417	(12,817)	67,035
Other income (expenses)	2,144	(28)	5,787	23
Loss attributable to noncontrolling interest	18,823	12,891	38,094	28,667
Net income available to members	$ 15,916	$ 45,280	$ 31,064	$ 95,725
ADES equity earnings from Tinuum Group	$ 6,764	$ 19,244	$ 13,202	$ 39,011

For the three and six months ended June 30, 2020 and the three months ended June 30, 2019, the Company recognized its pro-rata share of Tinuum Group's net income available to its members for the respective period. For the six months ended June 30, 2019, the Company recognized its pro-rata share of Tinuum Group's net income available to its members for the period, less the amount necessary to recover the cumulative earnings short-fall balance as of the end of the immediately preceding period, which was December 31, 2018. For the six months ended June 30, 2019, the difference between the Company's proportionate share of Tinuum Group's net income available to members (at its equity interest of 42.5%) and the Company's earnings from its Tinuum Group equity method investment as reported in the Condensed Consolidated Statements of Operations relates to the Company receiving distributions in excess of the carrying value of the equity investment, and therefore recognizing such excess distributions as equity method earnings in the period the distributions occur.

For the three and six months ended June 30, 2020, the Company recognized equity earnings from Tinuum Group of $6.8 million and $13.2 million, respectively. For the three and six months ended June 30, 2019, the Company recognized equity earnings from Tinuum Group of $19.2 million and $39.0 million, respectively.

The following tables present the Company's investment balance, equity earnings and cash distributions in excess of the investment balance, if any, for the three and six months ended June 30, 2020 and 2019 (*in thousands*):

Description	Date(s)	Investment balance	ADES equity earnings	Cash distributions	Memorandum Account: Cash distributions and equity earnings in (excess) of investment balance
Beginning balance	12/31/2019	$ 32,280	$ —	$ —	$ —
ADES proportionate share of income from Tinuum Group	First Quarter	6,438	6,438	—	—
Cash distributions from Tinuum Group	First Quarter	(13,764)	—	13,764	—
Total investment balance, equity earnings (loss) and cash distributions	3/31/2020	$ 24,954	$ 6,438	$ 13,764	$ —
ADES proportionate share of income from Tinuum Group	Second Quarter	$ 6,764	$ 6,764	$ —	$ —
Cash distributions from Tinuum Group	Second Quarter	(13,600)	—	13,600	—
Total investment balance, equity earnings and cash distributions	6/30/2020	$ 18,118	$ 6,764	$ 13,600	$ —

Description	Date(s)	Investment balance	ADES equity earnings (loss)	Cash distributions	Memorandum Account: Cash distributions and equity earnings in (excess) of investment balance
Beginning balance	12/31/2018	$ —	$ —	$ —	$ (1,672)
Impact of adoption of accounting standards (1)	First Quarter	37,232	—	—	—
ADES proportionate share of income from Tinuum Group	First Quarter	21,439	21,439	—	—
Recovery of prior cash distributions in excess of investment balance (prior to cash distributions)	First Quarter	(1,672)	(1,672)	—	1,672
Cash distributions from Tinuum Group	First Quarter	(16,788)	—	16,788	—
Total investment balance, equity earnings and cash distributions	3/31/2019	$ 40,211	$ 19,767	$ 16,788	$ —
ADES proportionate share of income from Tinuum Group	Second Quarter	$ 19,244	$ 19,244	$ —	$ —
Cash distributions from Tinuum Group	Second Quarter	(17,000)	—	17,000	—
Total investment balance, equity earnings and cash distributions	6/30/2019	$ 42,455	$ 19,244	$ 17,000	$ —

(1) Tinuum Group adopted Accounting Standards Codification Topic ("ASC") 606 - *Revenue from Contracts with Customers* and ASC 842 - *Leases* as of January 1, 2019. As a result of Tinuum Group's adoption of these standards, the Company recorded a cumulative adjustment of $27.4 million, net of the impact of income taxes, related to the Company's percentage of Tinuum Group's cumulative effect adjustment, which increased the Company's Retained earnings as of January 1, 2019.

Tinuum Services, LLC

The Company has a 50% voting and economic interest in Tinuum Services. The Company has determined that Tinuum Services is not a VIE and has evaluated its consolidation analysis under the voting interest model. Because the Company does not own greater than 50% of the outstanding voting shares, either directly or indirectly, it has accounted for its investment in Tinuum Services under the equity method of accounting. The Company's investment in Tinuum Services as of June 30, 2020 and December 31, 2019 was $4.9 million and $6.8 million, respectively.

The following table summarizes the results of operations of Tinuum Services:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Gross loss	$ (20,418)	$ (25,192)	$ (42,677)	$ (49,927)
Operating, selling, general and administrative expenses	43,515	50,412	89,268	99,862
Loss from operations	(63,933)	(75,604)	(131,945)	(149,789)
Other income (expenses)	(330)	(316)	(615)	(558)
Loss attributable to noncontrolling interest	67,071	79,307	139,043	157,577
Net income	$ 2,808	$ 3,387	$ 6,483	$ 7,230
ADES equity earnings from Tinuum Services	$ 1,404	$ 1,693	$ 3,242	$ 3,615

Included in the Consolidated Statements of Operations of Tinuum Services for the three and six months ended June 30, 2020 and 2019, respectively, were losses related to VIE's of Tinuum Services. These losses do not impact the Company's equity earnings from Tinuum Services as 100% of those losses are attributable to a noncontrolling interest and eliminated in the calculations of Tinuum Services' net income attributable to the Company's interest.

The following table details the components of the Company's respective equity method investments included in the Earnings from equity method investments line item on the Condensed Consolidated Statements of Operations:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Earnings from Tinuum Group	$ 6,764	$ 19,244	$ 13,202	$ 39,011
Earnings from Tinuum Services	1,404	1,693	3,242	3,615
Loss from other	—	(2)	(3)	(1)
Earnings from equity method investments	$ 8,168	$ 20,935	$ 16,441	$ 42,625

The following table details the components of the cash distributions from the Company's respective equity method investments included in the Condensed Consolidated Statements of Cash Flows. Distributions from equity method investees are reported in the Condensed Consolidated Statements of Cash Flows as "Distributions from equity method investees, return on investment" within Operating cash flows.

	Six Months Ended June 30,	
(in thousands)	2020	2019
Distributions from equity method investees, return on investment		
Tinuum Group	$ 27,364	$ 33,788
Tinuum Services	5,152	4,300
	$ 32,516	$ 38,088

Note 7 - Debt Obligations

	As of	
(in thousands)	**June 30, 2020**	**December 31, 2019**
Senior Term Loan due December 2021, related party	$ 28,000	$ 40,000
Less: net unamortized debt issuance costs	(815)	(1,163)
Less: net unamortized debt discount	(840)	(1,200)
Senior Term Loan due December 2021, net	26,345	37,637
Finance lease obligations	6,053	6,729
PPP Loan	3,305	—
	35,703	44,366
Less: Current maturities	(25,583)	(23,932)
Total long-term debt	$ 10,120	$ 20,434

Senior Term Loan

On December 7, 2018, the Company, and ADA-ES, Inc. ("ADA"), a wholly-owned subsidiary, and certain other subsidiaries of the Company as guarantors, The Bank of New York Mellon as administrative agent, and Apollo Credit Strategies Master Fund Ltd and Apollo A-N Credit Fund (Delaware) L.P. (collectively "Apollo"), affiliates of a beneficial owner of greater than five percent of the Company's common stock and a related party, entered into the Senior Term Loan in the amount of $70.0 million less original issue discount of $2.1 million. Proceeds from the Senior Term Loan were used to fund the Carbon Solutions Acquisition as disclosed in Note 4. The Company also paid debt issuance costs of $2.0 million related to the Senior Term Loan. The Senior Term Loan has a term of 36 months and bears interest at a rate equal to 3-month LIBOR (subject to a 1.5% floor) + 4.75% per annum, which is adjusted quarterly to the current 3-month LIBOR rate, and interest is payable quarterly in arrears. Quarterly principal payments of $6.0 million were required beginning in March 2019, and the Company may prepay the Senior Term Loan at any time without penalty. The Senior Term Loan is secured by substantially all the assets of the Company, including the cash flows from Tinuum Group and Tinuum Services (collectively, the "Tinuum Entities"), but excluding the Company's equity interests in the Tinuum entities.

The Senior Term Loan includes, among others, the following covenants: (1) Beginning December 31, 2018 and as of the end of each fiscal quarter thereafter, the Company must maintain a minimum cash balance of $5.0 million and shall not permit "expected future net cash flows from the refined coal business" (as defined in the Senior Term Loan) to be less than 1.75 times the outstanding principal amount of the Senior Term Loan; (2) Beginning in January 2019, annual collective dividends and buybacks of Company shares in an aggregate amount, not to exceed $30.0 million, is permitted so long as (a) no default or event of default exists under the Senior Term Loan and (b) expected future net cash flows from the refined coal business as of the end of the most recent fiscal quarter exceed $100.0 million.

Waiver on Senior Term Loan

Pursuant to entering into the PPP Loan, on April 20, 2020, the Company and Apollo executed the First Amendment to the Senior Term Loan, which permitted the Company to enter into the PPP Loan.

Line of Credit

On December 7, 2018, ADA-ES, Inc. ("ADA"), a wholly-owned subsidiary of the Company, as borrower, the Company, as guarantor, and a bank (the "Lender") entered into an amendment to the 2013 Loan and Security Agreement (the "Line of Credit"). This amendment provided, among other things, for ADA to be able to enter into the Senior Term Loan as a guarantor so long as the principal amount of the Senior Term Loan did not exceed $70.0 million. Additionally, the financial covenants in the Line of Credit were amended and restated to be consistent with the Senior Term Loan covenants, including maintaining a minimum cash balance of $5.0 million. The maturity date of the Line of Credit is September 30, 2020.

As of June 30, 2020, there were no outstanding borrowings under the Line of Credit.

Note 8 - Leases

As of June 30, 2020, the Company has obligations under finance and operating leases in the amounts of $6.1 million and $4.0 million, respectively. As of June 30, 2020, the Company has right of use ("ROU") assets, net of accumulated amortization, under finance leases and operating leases of $2.8 million and $2.5 million, respectively.

Finance leases

ROU assets under finance leases and finance lease liabilities are included in Property, plant and equipment and Current portion and Long-term portion of borrowings, respectively, in the Condensed Consolidated Balance Sheet as of June 30, 2020. Interest expense related to finance lease liabilities and amortization of ROU assets under finance leases are included in Interest expense and Depreciation, amortization, depletion and accretion, respectively, in the Condensed Consolidated Statement of Operations for the three and six months ended June 30, 2020.

Operating leases

ROU assets under operating leases and operating lease liabilities are included in Other long-term assets and Other liabilities and Other long-term liabilities, respectively, in the Condensed Consolidated Balance Sheet as of June 30, 2020.

Lease expense for operating leases for the three and six months ended June 30, 2020 was $1.1 million and $2.4 million, respectively, of which $1.0 million and $2.0 million, respectively, is included in Consumables - cost of revenue, exclusive of depreciation and amortization, and $0.2 million and $0.4 million, respectively, is included in General and administrative in the Condensed Consolidated Statement of Operations. Lease expense for operating leases for the three and six months ended June 30, 2019 was $1.2 million and $2.4 million, respectively, of which $1.0 million and $2.1 million, respectively, is included in Consumables - cost of revenue, exclusive of depreciation and amortization, and $0.2 million and $0.3 million, respectively, is included in General and administrative in the Condensed Consolidated Statement of Operations.

Lease financial information as of and for the three and six months ended June 30, 2020 and 2019 is provided in the following table:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	**2020**	**2019**	**2020**	**2019**
Finance lease cost:				
Amortization of right-of-use assets	$ 465	$ 558	$ 979	$ 1,094
Interest on lease liabilities	93	57	187	188
Operating lease cost	676	927	1,529	1,856
Short-term lease cost	424	189	706	360
Variable lease cost (1)	44	93	137	175
Total lease cost	$ 1,702	$ 1,824	$ 3,538	$ 3,673
Other Information:				
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows from finance leases			$ 187	$ 187
Operating cash flows from operating leases			$ 1,213	$ 1,901
Financing cash flows from finance leases			$ 676	$ 681
Right-of-use assets obtained in exchange for new operating lease liabilities			$ 60	$ 49
Weighted-average remaining lease term - finance leases			3.8 years	4.7 years
Weighted-average remaining lease term - operating leases			2.1 years	2.4 years
Weighted-average discount rate - finance leases			6.1%	6.1%
Weighted-average discount rate - operating leases			8.5%	8.6%

(1) Primarily includes common area maintenance, property taxes and insurance payable to lessors.

Note 9 - Revenues

Trade receivables represent an unconditional right to consideration in exchange for goods or services transferred to a customer. The Company invoices its customers in accordance with the terms of the contract. Credit terms are generally net 30 from the date of invoice. The timing between the satisfaction of performance obligations and when payment is due from the customer is generally not significant. The Company records allowances for doubtful trade receivables when it is probable that the balances will not be collected.

Trade receivables, net

The following table shows the components of Trade receivables, net:

	As of	
(in thousands)	June 30, 2020	December 31, 2019
Trade receivables	$ 5,922	$ 8,057
Less: Allowance for doubtful accounts	(603)	(627)
Trade receivables, net	$ 5,319	$ 7,430

For the three and six months ended June 30, 2020 and 2019, the Company recognized zero bad debt expense, respectively.

Disaggregation of Revenue and Earnings from Equity Method Investments

During the three and six months ended June 30, 2020 and 2019, all performance obligations related to revenues recognized were satisfied at a point in time. The Company disaggregates its revenues by major components as well as between its two reportable segments, which are further discussed in Note 15 to the Condensed Consolidated Financial Statements. The following tables disaggregate revenues by major component for the three and six months ended June 30, 2020 and 2019 (in thousands):

	Three Months Ended June 30, 2020				Six Months Ended June 30, 2020			
	Segment				Segment			
	PGI	RC	Other	Total	PGI	RC	Other	Total
Revenue component								
Consumables	$ 7,070	$ —	$ 1,100	$ 8,170	$ 15,545	$ —	$ 1,842	$ 17,387
License royalties, related party	—	3,313	—	3,313	—	6,359	—	6,359
Revenues from customers	7,070	3,313	1,100	11,483	15,545	6,359	1,842	23,746
Earnings from equity method investments	—	8,168	—	8,168	—	16,441	—	16,441
Total revenues from customers and earnings from equity method investments	$ 7,070	$ 11,481	$ 1,100	$ 19,651	$ 15,545	$ 22,800	$ 1,842	$ 40,187

	Three Months Ended June 30, 2019				Six Months Ended June 30, 2019			
	Segment				Segment			
	PGI	RC	Other	Total	PGI	RC	Other	Total
Revenue component								
Consumables	$11,049	$ —	$ 337	$ 11,386	$25,602	$ —	$ 893	$26,495
License royalties, related party	—	4,191	—	4,191	—	8,411	—	8,411
Revenues from customers	11,049	4,191	337	15,577	25,602	8,411	893	34,906
Earnings from equity method investments	—	20,935	—	20,935	—	42,625	—	42,625
Total revenues from customers and earnings from equity method investments	$11,049	$25,126	$ 337	$ 36,512	$25,602	$51,036	$ 893	$77,531

Note 10 - Commitments and Contingencies

Legal Proceedings

The Company is from time to time subject to, and is presently involved in, various pending or threatened legal actions and proceedings, including those that arise in the ordinary course of its business. Such matters are subject to many uncertainties and outcomes, the financial impacts of which are not predictable with assurance and that may not be known for extended periods of time. The Company records a liability in its consolidated financial statements for costs related to claims, settlements, and judgments where management has assessed that a loss is probable and an amount can be reasonably estimated. There were no significant legal proceedings as of June 30, 2020.

Restricted Cash

As of June 30, 2020 and December 31, 2019, the Company had long-term restricted cash of $5.0 million and $5.0 million, respectively, which primarily consisted of minimum cash balance requirements under the Senior Term Loan.

Other Commitments and Contingencies

The Company has certain limited obligations contingent upon future events in connection with the activities of Tinuum Group. The Company, NexGen Refined Coal, LLC ("NexGen") and two entities affiliated with NexGen have provided an affiliate of the Goldman Sachs Group, Inc. with limited guaranties (the "Tinuum Group Party Guaranties") related to certain losses it may suffer as a result of inaccuracies or breach of representations and covenants. The Company also is a party to a contribution agreement with NexGen under which any party called upon to pay on a Tinuum Group Party Guaranty is entitled to receive contributions from the other party equal to 50% of the amount paid. The Company has not recorded a liability or expense provision related to this contingent obligation as it believes that it is not probable that a loss will occur with respect to the Tinuum Group Party Guaranties.

Note 11 - Stockholders' Equity

Stock Repurchase Programs

In November 2018, the Company's Board of Directors (the "Board") authorized the Company to purchase up to $20.0 million of its outstanding common stock under a stock repurchase program (the "Stock Repurchase Program"), which was to remain in effect until December 31, 2019 unless otherwise modified by the Board. As of November 2019, $2.9 million remained outstanding related to the Stock Repurchase Program. In November 2019, the Board authorized an incremental $7.1 million to the Stock Repurchase Program and provided that it will remain in effect until all amounts are utilized or it is otherwise modified by the Board.

For the three and six months ended June 30, 2020, under the Stock Repurchase Program, the Company purchased zero and 20,613 shares, respectively, of its common stock for cash of zero and $0.2 million, respectively, inclusive of commissions and fees. For the three and six months ended June 30, 2019, under the Stock Repurchase Program, the Company purchased 184,715 and 248,591 shares, respectively, of its common stock for cash of $2.1 million and $2.8 million, respectively, inclusive of commissions and fees. As of June 30, 2020, the Company had $7.0 million remaining under the Stock Repurchase Program.

Quarterly Cash Dividend

Dividends declared and paid quarterly on all outstanding shares of common stock during the three and six months ended June 30, 2020 and 2019 were as follows:

	2020		2019	
	Per share	Date paid	Per share	Date paid
Dividends declared during quarter ended:				
March 31	$ 0.25	March 10, 2020	$ 0.25	March 7, 2019
June 30	$ —		$ 0.25	June 7, 2019
	$ 0.25		$ 0.50	

A portion of the dividends declared remains accrued subsequent to the payment dates and represents dividends accumulated on nonvested shares of common stock held by employees and directors of the Company that contain forfeitable dividend rights that are not payable until the underlying shares of common stock vest. These amounts are included in both Other current liabilities and Other long-term liabilities on the Condensed Consolidated Balance Sheet as of June 30, 2020.

Tax Asset Protection Plan

U.S. federal income tax rules, and Section 382 of the Internal Revenue Code in particular, could substantially limit the use of net operating losses and other tax assets if the Company experiences an "ownership change" (as defined in the Internal Revenue Code). In general, an ownership change occurs if there is a cumulative change in the ownership of the Company by "5 percent stockholders" that exceeds 50 percentage points over a rolling three-year period.

On May 5, 2017, the Board approved the declaration of a dividend of rights to purchase Series B Junior Participating Preferred Stock for each outstanding share of common stock as part of a tax asset protection plan (the "TAPP") designed to protect the Company's ability to utilize its net operating losses and tax credits. The TAPP is intended to act as a deterrent to any person acquiring beneficial ownership of 4.99% or more of the Company's outstanding common stock.

On April 9, 2020, the Board approved the Third Amendment to the TAPP ("Third Amendment") that amends the TAPP, as previously amended by the First and Second Amendments that were approved the Board on April 6, 2018 and April 5, 2019, respectively. The Third Amendment amends the definition of "Final Expiration Date" under the TAPP to extend the duration of the TAPP and makes associated changes in connection therewith. At the Company's 2020 annual meeting of stockholders, the Company's stockholders approved the Second Amendment, thus the Final Expiration Date will be the close of business on December 31, 2021.

Note 12 - Stock-Based Compensation

The Company grants equity-based awards to employees, non-employee directors, and consultants that may include, but are not limited to, RSA's, restricted stock units ("RSU's"), performance stock units ("PSU's") and stock options. Stock-based compensation expense related to manufacturing employees and administrative employees is included within the Cost of goods sold and Payroll and benefits line items, respectively, in the Condensed Consolidated Statements of Operations. Stock-based compensation expense related to non-employee directors and consultants is included within the General and administrative line item in the Condensed Consolidated Statements of Operations.

Total stock-based compensation expense for the three and six months ended June 30, 2020 and 2019 was as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
RSA expense	$ 975	$ 541	$ 1,481	$ 858
PSU expense	163	—	163	—
Total stock-based compensation expense	$ 1,138	$ 541	$ 1,644	$ 858

The amount of unrecognized compensation cost as of June 30, 2020, and the expected weighted-average period over which the cost will be recognized is as follows:

	As of June 30, 2020	
(in thousands)	Unrecognized Compensation Cost	Expected Weighted-Average Period of Recognition (in years)
RSA expense	$ 2,173	2.18
PSU expense	146	2.69
Total unrecognized stock-based compensation expense	$ 2,319	2.21

Restricted Stock

Restricted stock is typically granted with vesting terms of three years. The fair value of RSA's and RSU's is determined based on the closing price of the Company's common stock on the authorization date of the grant multiplied by the number of shares subject to the stock award. Compensation expense for RSA's is generally recognized on a straight-line basis over the entire vesting period. Compensation expense for RSU's is generally recognized on a straight-line basis over the service period of the award.

A summary of RSA activity under the Company's various stock compensation plans for the six months ended June 30, 2020 is presented below:

	Restricted Stock	Weighted-Average Grant Date Fair Value
Non-vested at January 1, 2020	451,344	$ 10.65
Granted	218,524	$ 5.34
Vested	(195,884)	$ 10.48
Forfeited	(3,814)	$ 8.48
Non-vested at June 30, 2020	470,170	$ 8.27

Stock Options

Stock options generally vest over three years or upon satisfaction of performance-based conditions and have a contractual limit of five years from the date of grant to exercise. The fair value of stock options granted is determined on the date of grant using the Black-Scholes option pricing model and the related expense is recognized on a straight-line basis over the entire vesting period.

A summary of stock option activity for the six months ended June 30, 2020 is presented below:

	Number of Options Outstanding and Exercisable	Weighted-Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted-Average Remaining Contractual Term (in years)
Options outstanding, January 1, 2020	300,000	$ 13.87		
Options granted	—	—		
Options exercised	—	—		
Options expired / forfeited	(300,000)	13.87		
Options outstanding, June 30, 2020	—	$ —	$ —	0
Options vested and exercisable, June 30, 2020	—	$ —	$ —	0

Performance Share Units

Compensation expense is recognized for PSU awards on a straight-line basis over the applicable service period, which is generally three years, based on the estimated fair value at the date of grant using a Monte Carlo simulation model. A summary of PSU activity for the six months ended June 30, 2020 is presented below:

	Units	Weighted-Average Grant Date Fair Value	Aggregate Intrinsic Value (in thousands)	Weighted-Average Remaining Contractual Term (in years)
PSU's outstanding, January 1, 2020	—	$ —		
Granted	50,127	6.17		
Vested / Settled	—	—		
Forfeited / Canceled	—	—		
PSU's outstanding, June 30, 2020	50,127	$ 6.17	$ 243	2.69

Note 13 - Supplemental Financial Information

Supplemental Balance Sheet Information

The following table summarizes the components of Prepaid expenses and other assets and Other long-term assets, net as presented in the Condensed Consolidated Balance Sheets:

	As of	
(in thousands)	June 30, 2020	December 31, 2019
Prepaid expenses and other assets:		
Federal and state income tax benefits	$ 11,416	$ —
Prepaid federal and state income taxes	4,215	4,228
Prepaid expenses	1,987	1,708
Other	1,341	1,896
	$ 18,959	$ 7,832
Other long-term assets, net:		
Right of use assets, operating leases, net	$ 2,529	$ 5,073
Spare parts, net	3,559	3,453
Mine development costs, net	4,139	7,084
Mine reclamation asset, net	1,323	2,451
Highview Investment	552	552
Other long-term assets	1,779	1,718
	$ 13,881	$ 20,331

Spare parts include critical spares required to support plant operations. Parts and supply costs are determined using the lower of cost or estimated replacement cost. Parts are recorded as maintenance expenses in the period in which they are consumed.

Mine development costs include acquisition costs, the cost of other development work and mitigation costs related to the Company's mining operations and are depleted over the estimated life of the related mine reserves, which is 21 years. The Company performs an evaluation of the recoverability of the carrying value of mine development costs to determine if facts and circumstances indicate that their carrying value may be impaired and if any adjustment is warranted. Indicators of impairment were present as of June 30, 2020. See Note 2 for further discussion. Mine reclamation asset, net represents an asset retirement obligation asset and is depreciated over the estimated life of the mine.

The Company holds a long-term investment (the "Highview Investment") in Highview Enterprises Limited ("Highview"), a London, England based developmental stage company specializing in power storage. The Company accounts for the Highview Investment as an investment recorded at cost, less impairment, plus or minus observable changes in price for identical or similar investments of the same issuer.

The Highview Investment is evaluated for indicators of impairment such as an event or change in circumstances that may have a significant adverse effect on the fair value of the investment. There were no changes to the carrying value of the Highview Investment for the three and six months ended June 30, 2020 as there were no indicators of impairment or observable price changes for identical or similar investments.

The following table details the components of Other current liabilities and Other long-term liabilities as presented in the Condensed Consolidated Balance Sheets:

	As of	
(in thousands)	June 30, 2020	December 31, 2019
Other current liabilities:		
Current portion of operating lease obligations	$ 2,025	$ 2,382
Accrued interest	116	213
Income and other taxes payable	708	678
Other	528	1,038
	$ 3,377	$ 4,311
Other long-term liabilities:		
Operating lease obligations, long-term	$ 1,954	$ 2,810
Mine reclamation liability	2,804	2,721
Other	58	229
	$ 4,816	$ 5,760

Supplemental Condensed Consolidated Statements of Operations Information

The following table details the components of Interest expense in the Condensed Consolidated Statements of Operations:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Interest on Senior Term Loan	$ 484	$ 1,134	$ 1,114	$ 2,404
Debt discount and debt issuance costs	355	470	709	851
453A interest	28	326	160	648
Other	95	57	189	188
	$ 962	$ 1,987	$ 2,172	$ 4,091

Note 14 - Income Taxes

For the three and six months ended June 30, 2020 and 2019, the Company's income tax expense and effective tax rates based on forecasted pretax income were:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands, except for rate)	2020	2019	2020	2019
Income tax expense	$ 103	$ 6,634	$ 461	$ 8,333
Effective tax rate	— %	45%	(2)%	27%

The effective rate for the three and six months ended June 30, 2020 was different from the federal statutory rate primarily from an increase in the valuation allowance on deferred tax assets of $4.5 million and $5.4 million, respectively. The increase in the valuation allowance was a result of a reduction in forecasts as of June 30, 2020 of current and future years' taxable income.

The Company assesses the valuation allowance recorded against deferred tax assets at each reporting date. The determination of whether a valuation allowance for deferred tax assets is appropriate requires the evaluation of positive and negative evidence that can be objectively verified. Consideration must be given to all sources of taxable income available to realize the deferred tax asset, including, as applicable, the future reversal of existing temporary differences, future taxable income forecasts exclusive of the reversal of temporary differences and carryforwards, taxable income in carryback years and tax planning strategies. In estimating income taxes, the Company assesses the relative merits and risks of the appropriate income tax treatment of transactions taking into account statutory, judicial, and regulatory guidance.

Note 15 - Business Segment Information

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by a company's chief operating decision maker ("CODM"), or a decision-making group, in deciding how to allocate resources and in assessing financial performance. As of June 30, 2020, the Company's CODM was the Company's CEO. The Company's operating and reportable segments are identified by products and services provided.

As of June 30, 2020, the Company has two reportable segments: (1) Refined Coal ("RC"); and (2) Power Generation and Industrials ("PGI").

The business segment measurements provided to and evaluated by the CODM are computed in accordance with the principles listed below:

- The accounting policies of the operating segments are the same as those described in the summary of significant accounting policies in the 2019 Form 10-K.
- Segment revenues include equity method earnings and losses from the Company's equity method investments.
- Segment operating income (loss) includes segment revenues and allocation of certain "Corporate general and administrative expenses," which include Payroll and benefits, Legal and professional fees and General and administrative.
- RC segment operating income includes interest expense directly attributable to the RC segment.

As of June 30, 2020 and December 31, 2019, substantially all of the Company's material assets are located in the U.S. and substantially all of significant customers are U.S. companies. The following table presents the Company's operating segment results for the three and six months ended June 30, 2020 and 2019:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Revenues:				
Refined Coal:				
Earnings in equity method investments	$ 8,168	$ 20,935	$ 16,441	$ 42,625
License royalties, related party	3,313	4,191	6,359	8,411
	11,481	25,126	22,800	51,036
Power Generation and Industrials:				
Consumables	7,070	11,049	15,545	25,602
	7,070	11,049	15,545	25,602
Total segment reporting revenues	18,551	36,175	38,345	76,638
Adjustments to reconcile to reported revenues:				
Earnings in equity method investments	(8,168)	(20,935)	(16,441)	(42,625)
Corporate and other	1,100	337	1,842	893
Total reported revenues	$ 11,483	$ 15,577	$ 23,746	$ 34,906
Segment operating income (loss):				
Refined Coal (1)	$ 10,777	$ 24,596	$ 21,637	$ 49,979
Power Generation and Industrials (2)	(25,737)	(3,862)	(32,314)	(7,324)
Total segment operating income	$ (14,960)	$ 20,734	$ (10,677)	$ 42,655

(1) Included in RC segment operating income for the three and six months ended June 30, 2020 is 453A interest expense of zero and $0.2 million, respectively. Included in RC segment operating income for the three and six months ended June 30, 2019 is 453A interest expense of $0.3 million and $0.6 million, respectively.

(2) Included in PGI segment operating loss for the three and six months ended June 30, 2020 is $23.2 million and $23.2 million, respectively, of impairment expense on the Asset Group, and $0.4 million and $0.4 million, respectively, of expenses related to sequestration of certain of our employees at our manufacturing plant in Louisiana. Included in PGI segment operating loss for the three and six months ended June 30, 2020 and 2019 is $1.4 million and $3.4 million, and $0.7 million and $2.6 million, respectively, of depreciation, amortization, and depletion

expense on mine and plant long-lived assets. Included in PGI segment operating loss for the three and six months ended June 30, 2019 was $1.3 million and $4.7 million, respectively, of costs recognized as a result of the step-up in inventory fair value recorded from the Carbon Solutions Acquisition.

A reconciliation of reportable segment operating income to the Company's consolidated (loss) income before income tax expense is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Total reported segment operating income	$ (14,960)	$ 20,734	$ (10,677)	$ 42,655
Other operating loss (1)	(4,262)	(353)	(5,055)	(751)
	(19,222)	20,381	(15,732)	41,904
Adjustments to reconcile to (loss) income before income tax expense attributable to the Company:				
Corporate payroll and benefits	(1,148)	(804)	(1,857)	(1,236)
Corporate legal and professional fees	(925)	(1,556)	(2,674)	(3,517)
Corporate general and administrative	(1,558)	(1,715)	(3,157)	(3,149)
Corporate depreciation and amortization	(163)	(7)	(189)	(20)
Corporate interest (expense) income, net	(824)	(1,604)	(1,766)	(3,255)
Other income (expense), net	129	53	129	122
(Loss) income before income tax expense	$ (23,711)	$ 14,748	$ (25,246)	$ 30,849

(1) Included in Other operating loss for the three and six months ended June 30, 2020 was $2.9 million and $2.9 million, respectively, of impairment expense on the Asset Group.

Corporate general and administrative expenses include certain costs that benefit the business as a whole but are not directly related to one of the Company's segments. Such costs include, but are not limited to, accounting and human resources staff, information systems costs, legal fees, facility costs, audit fees and corporate governance expenses.

A reconciliation of reportable segment assets to the Company's consolidated assets is as follows:

	As of	
(in thousands)	June 30, 2020	December 31, 2019
Assets:		
Refined Coal (1)	$ 27,070	$ 43,953
Power Generation and Industrials	54,022	80,912
Total segment assets	81,092	124,865
All Other and Corporate (2)	52,238	48,934
Consolidated	$ 133,330	$ 173,799

(1) Includes $23.1 million and $39.2 million of investments in equity method investees, respectively.
(2) Includes the Company's deferred tax assets.

Note 16 - Fair Value Measurements

Fair value of financial instruments

The carrying amounts of financial instruments, including cash, cash equivalents and restricted cash, accounts receivable, accounts payable and accrued expenses, approximate fair value due to the short maturity of these instruments. Accordingly, these instruments are not presented in the table below. The following table provides the estimated fair values of the remaining financial instruments:

	As of June 30, 2020		As of December 31, 2019	
(in thousands)	Carrying Value	Fair Value	Carrying Value	Fair Value
Financial Instruments:				
Highview Investment	$ 552	$ 552	$ 552	$ 552
Highview Obligation	$ 210	$ 210	$ 220	$ 220

Concentration of credit risk

The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents. The Company holds cash and cash equivalents at three financial institutions as of June 30, 2020. If an institution was unable to perform its obligations, the Company would be at risk regarding the amount of cash and investments in excess of the Federal Deposit Insurance Corporation limits (currently $250 thousand) that would be returned to the Company.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

As of June 30, 2020 and December 31, 2019, the Company had no financial instruments carried and measured at fair value on a recurring basis.

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

As disclosed in Note 4, the Company completed the Carbon Solutions Acquisition for purchase consideration of $66.5 million. The estimated fair values of the assets acquired and liabilities assumed were determined based on Level 3 inputs.

As disclosed in Note 2, the Company recorded an impairment charge related to the Asset Group based on a valuation models that included an expected future discounted cash flow model using Level 3 inputs.

The Company has applied the measurement alternative for investments without readily determinable fair values under ASC Topic 321 - *Investments in Equity Securities* ("ASC 321") for the Highview Investment. Fair value measurements, if any, resulting from the Company's application of the guidance in ASC 321 represent either Level 2 or Level 3 measurements. There were no changes to the carrying value of the Highview Investment for the three months ended June 30, 2020 and 2019 as there were no indicators of impairment or observable price changes for identical or similar investments.

Note 17 - Restructuring and Other Compensation

Restructuring

In December 2018, the Company recorded restructuring charges in connection with the departures of certain executives of Carbon Solutions in conjunction with the Carbon Solutions Acquisition. As part of the Carbon Solutions Acquisition, the Company also assumed a salary severance liability for an additional executive of Carbon Solutions in the amount of $0.6 million. There were no material restructuring activities during the three and six months ended June 30, 2020.

Restructuring accruals are included within the Accrued payroll and related liabilities line item in the Condensed Consolidated Balance Sheets. Restructuring expenses are included within the Payroll and benefits line item in the Condensed Consolidated Statements of Operations.

Other Compensation

On March 27, 2020, the Company's CEO resigned from the Company effective June 30, 2020. Pursuant to a settlement agreement executed between the Company and the CEO, the Company was obligated to pay severance compensation to the CEO in the form of salary continuance, cash bonus, contingent upon the Company achieving a performance metric, healthcare benefits, RSAs and PSUs, which in the aggregate was $1.4 million. As of June 30, 2020, the Company recorded a liability for the total severance compensation and corresponding expense for the three and six months ended June 30, 2020 under the caption "Payroll and benefits" in the Condensed Consolidated Statements of Operations.

The following table summarizes the Company's change in restructuring and other compensation accruals for the six months ended June 30, 2020:

(in thousands)	**Severance**
Remaining accrual as of December 31, 2019	$ 254
Expense provision	1,403
Cash payments and other	(817)
Change in estimates	—
Remaining accrual as of June 30, 2020	$ 840

Note 18 - Subsequent Events

Unless disclosed elsewhere within the notes to the Condensed Consolidated Financial Statements, the following are the significant matters that occurred subsequent to June 30, 2020.

Invested RC Facilities

On July 2, 2020, the Company announced that Tinuum Group sold its 49.9% ownership in a RC project to a new third party investor. The RC facility is located at a coal plant that has historically burned in excess of 2.5 million tons of coal per year. This facility is a royalty bearing facility to the Company.

Additionally, on July 15, 2020, the Company announced that Tinuum Group completed a lease for an additional RC facility. The RC facility is located at a coal plant that has historically burned in excess of 2.0 million tons of coal per year. With this addition, Tinuum Group has 21 invested facilities in full-time operation.

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 our operations should be read together with the unaudited Condensed Consolidated Financial Statements and notes of Advanced Emissions Solutions, Inc. ("ADES" or the "Company") included elsewhere in Item 1 of Part I of this Quarterly Report and with the audited consolidated financial statements and the related notes of ADES included in the 2019 Form 10-K.

Overview

We are a leader in emissions reductions technologies through consumables that utilize powdered activated carbon ("PAC") and chemical based technologies, primarily serving the coal-fired power generation and industrial boiler industries. Our proprietary environmental technologies and specialty chemicals enable our customers to reduce emissions of mercury and other pollutants, maximize utilization levels and improve operating efficiencies to meet the challenges of existing and potential emissions control regulations. Our products are also used for the purification of water.

Through our wholly-owned subsidiary, ADA Carbon Solutions, LLC ("Carbon Solutions"), which we acquired on December 7, 2018 (the "Acquisition Date"), we manufacture and sell activated carbon ("AC") used in mercury capture for the coal-fired power plant, industrial and water treatment markets. Carbon Solutions also owns an associated lignite mine that supplies the primary raw material for manufacturing our products.

We operate two segments: Refined Coal ("RC") and Power Generation and Industrials ("PGI"). Our RC segment is comprised of our equity ownership in Tinuum Group, LLC ("Tinuum Group") and Tinuum Services, LLC ("Tinuum Services"), both unconsolidated entities in which we generate substantial earnings. Tinuum Group provides reduction of mercury and nitrogen oxide ("NO_X") emissions at select coal-fired power generators through the production and sale of RC that qualifies for tax credits ("Section 45 tax credits") under the Internal Revenue Code *Section 45 - Production Tax Credit* ("IRC Section 45"). We benefit from Tinuum Group's production and sale of RC, which generates tax credits, as well as its revenue from selling or leasing RC facilities to tax equity investors. We also earn royalties for technologies that we license to Tinuum Group and used at certain RC facilities to enhance combustion and reduced emissions of NOx and mercury from coal burned to generate electrical power. Tinuum Services operates and maintains the RC facilities under operating and maintenance agreements with Tinuum Group and owners or lessees of the RC facilities.

Our PGI segment includes the sale of products that provide mercury control and other air and water contaminants control to coal-fired power generators and other industrial companies. Our primary products are produced from lignite coal, which creates AC. From AC, we manufacture various forms of AC that include PAC and granular activated carbon ("GAC"). There are three primary consumable products that work in conjunction with the installed equipment at coal-fired utilities to control mercury: PAC, coal additives and scrubber additives. In many cases these three consumable products can be used together or in many circumstances substituted for each other. However, AC is typically the most efficient and effective way to capture mercury and currently accounts for over 50% of the mercury control consumables North American market.

Drivers of Demand and Key Factors Affecting Profitability

Drivers of demand and key factors affecting our profitability differ by segment. In the RC segment, demand is driven primarily by IRC Section 45, which is expected to expire no later than December 31, 2021. Operating results in RC have been influenced by: (1) the ability to sell, lease or operate RC facilities; (2) lease renegotiation or termination; and (3) changes in tonnage of RC due to changing coal-fired dispatch and electricity power generation sources. In the PGI segment, demand is driven primarily by consumables-based solutions for coal-fired power generation and other industrials. Operating results in PGI have been influenced by: (1) changes in our sales volumes; (2) changes in price and product mix; and (3) changes in coal-fired dispatch and electricity power generation sources.

Impairment

As part of our periodic review of the carrying value of long-lived assets, we assessed our long-lived assets for potential impairment as of June 30, 2020. We completed an undiscounted cash flow analysis of our PGI segment's and certain other long-lived asset group (the "Asset Group"), which is comprised of our manufacturing plant and related assets and our lignite mine assets, and estimated the undiscounted cash flows from the Asset Group, which were less than the carrying value of the Asset Group. The decrease in undiscounted cash flows was due to lower volumes impacted by overall lower power generation and an increase in power generation from sources other than coal as a percentage of total generation. Accordingly, we completed an assessment of the Asset Group's fair value and estimated the fair value of the Asset Group at $32.2 million.

We engaged an independent third party to perform the valuation of the Asset Group in order to determine the estimated fair value of the Asset Group. This valuation was based on the use of several established valuation models including an expected future discounted cash flow model. The cash flows are those expected to be generated by market participants discounted at the risk-free rate of interest. Because of the continued future uncertainty surrounding the level of coal-fired dispatch, the impact of historically low natural gas prices and other estimates impacting the expected future cash flow, it is reasonably possible that the expected future cash flows may change in the near term and may require the recording of additional impairment of the Asset Group.

Impact of COVID-19

In March 2020, the World Health Organization ("WHO") declared the novel strain of coronavirus ("COVID-19") a global pandemic. We are designated by the Cybersecurity and Infrastructure Security Agency ("CISA") of the Department of Homeland Security as a critical infrastructure supplier to the energy sector. Our operations have been deemed essential and, therefore, our facilities remain open and our employees employed. We follow the COVID-19 guidelines from the Centers for Disease Control concerning the health and safety of our personnel, including remote working for those that have the ability to do so, sequestered employees at our plant and other heath safety measures. These measures have resulted in an increase in our personnel costs, operational inefficiencies and the incurrence of incremental costs to allow manufacturing operations to continue; while at the same time we have faced a general downturn in our sales and marketing efforts. The duration of these measures is unknown, may be extended and additional measures may be imposed.

Both of our business segments have continued to operate during the pandemic, and we have taken certain proactive and precautionary steps to ensure the safety of our employees, customers and suppliers, including frequent cleaning and disinfection of workspaces, property, plant and equipment, instituting social distancing measures and mandating remote working environments, where possible, for all employees. We cannot, however, predict the long-term effects on our business, including our financial position or results of operations, if governmental restrictions or other such directives continue for a prolonged period of time and cause a material negative change in power generation demand, materially disrupt our supply chain, substantially increase our operating costs or limit our ability to serve existing customers and seek new customers.

In response to the COVID-19 outbreak, in March 2020, the federal government passed the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"). The CARES Act provided, among other things, the deferral of payroll tax payments for all payroll taxes incurred through December 31, 2020. The Company has elected to defer payments of payroll taxes for the periods allowed under the CARES Act and will repay 50% by December 31, 2021 and 50% by December 31, 2022. For the three months ended June 30, 2020, total payroll tax payments deferred under the CARES Act were $0.1 million.

During the three months ended June 30, 2020, we incurred costs of $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana. These costs included hazard pay, lodging and meal expenses for 30 days.

Our customers may also be impacted by COVID-19 pandemic as the utilization of energy has changed. We cannot predict the long-term impact on our customers and the subsequent impact on our business.

Results of Operations

For the three and six months ended June 30, 2020, we recognized a net loss of $23.8 million and $25.7 million, respectively, compared to net income of $8.1 million and $22.5 million, for the three and six months ended June 30, 2019, respectively.

The operating results for the three and six months ended June 30, 2020 are primarily attributable to a combination of factors, including:

- Continued performance in our RC business segment, principally related to equity earnings and license royalties;
- Performance in our PGI business segment, principally related to Carbon Solutions;
- Impairment recorded related to our PGI segment's and certain other long-lived asset groups; and
- Impacts related to changes in income tax expense.

The following sections provide additional information regarding these comparative periods. For comparability purposes, the following tables set forth our results of operations for the periods presented in the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report. The period-to-period comparison of financial results may not be indicative of financial results to be achieved in future periods.

Comparison of the Three Months Ended June 30, 2020 and 2019

Total Revenue and Cost of Revenue

A summary of the components of our revenues and cost of revenue for the three months ended June 30, 2020 and 2019 is as follows:

	Three Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Revenues:				
Consumables	$ 8,170	$ 11,386	$ (3,216)	(28)%
License royalties, related party	3,313	4,191	(878)	(21)%
Total revenues	$ 11,483	$ 15,577	$ (4,094)	(26)%
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	$ 7,416	$ 12,286	$ (4,870)	(40)%
Other sales cost of revenue, exclusive of depreciation and amortization	$ —	$ 6	$ (6)	(100)%

Consumables and consumables cost of revenue

For the three months ended June 30, 2020, consumables revenues decreased from the comparable quarter in 2019 primarily due to lower volumes, which were negatively impacted by lower coal-fired power dispatch driven by a decrease of 5.4% in overall power generation, as well as an increase in power generation from sources other than coal as a percentage of total generation. Our gross margin, exclusive of depreciation and amortization, increased for the three months ended June 30, 2020 compared to the corresponding quarter in 2019 primarily from lower operating costs during the 2020 quarter, driven by increased production volume to ensure inventory levels were adequate to meet customer needs in the event operations were impacted by COVID-19. Consumables revenue is affected by electricity demand driven by seasonal weather and related power generation needs, as well as competitor prices related to alternative power generation sources such as natural gas. According to data provided by the U.S. Energy Information Administration ("EIA"), for the three months ended June 30, 2020, power generation from coal-fired power dispatch was down approximately 26% compared to the corresponding quarter in 2019.

Consumables cost of revenue was negatively impacted for the three months ended June 30, 2019 due to $1.4 million of costs recognized as a result of a step-up in inventory fair value recorded from the acquisition of Carbon Solutions. As of June 30, 2019, the step-up in inventory was fully recognized in cost of revenue.

License royalties, related party

For the three months ended June 30, 2020 and 2019, there were 9.2 million tons and 9.6 million tons, respectively, of RC produced using M-45™ and M-45-PC™ technologies ("M-45 Technology"), which Tinuum Group licenses from us ("M-45 License"). This decrease combined with a lower royalty rate per ton resulted in a decrease in license royalties quarter over quarter. The reduction in the royalty rate per ton was primarily attributable to higher depreciation recognized of approximately $0.7 million on all royalty bearing RC facilities as a result of a reduction in their estimated useful lives as determined by Tinuum Group in the second half of 2019. Further reducing the rate per ton was a decrease in net lease payments of approximately $0.3 million as a result of Tinuum Group restructuring RC facility contracted leases with its largest customer in the second half of 2019. As a result of higher depreciation and lower lease payments, we expect that the lower royalty rate per ton will continue for the remainder of 2020 and in 2021.

Additional information related to revenue concentrations and contributions by class and reportable segment can be found within the Business Segments discussion and in Note 15 to the Condensed Consolidated Financial Statements.

Other Operating Expenses

A summary of the components of our operating expenses, exclusive of cost of revenue items (presented above), for the three months ended June 30, 2020 and 2019 is as follows:

	Three Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Operating expenses:				
Payroll and benefits	$ 3,812	$ 2,798	$ 1,014	36 %
Legal and professional fees	1,022	1,995	(973)	(49)%
General and administrative	2,462	1,995	467	23 %
Depreciation, amortization, depletion and accretion	1,733	757	976	129 %
Impairment of long-lived assets	26,103	—	26,103	*
	$ 35,132	$ 7,545	$ 27,587	366 %

* Calculation not meaningful

Payroll and benefits

Payroll and benefits expenses, which represent costs related to selling, general and administrative personnel, increased for the three months ended June 30, 2020 compared to the corresponding quarter in 2019 primarily due to severance related costs of $1.4 million associated with the resignation of an executive officer. Offsetting this increase was a decrease of approximately $0.3 million related to a decrease in headcount and payroll-related expenses.

Legal and professional fees

Legal and professional fees decreased for the three months ended June 30, 2020 compared to the corresponding quarter in 2019 as a result of cost reductions related to professional fees; primarily consulting and outsourced IT cost specific to the completion of the integration of Carbon Solutions of $0.3 million. The remaining decrease was a result of decreased outsourced shared service costs, including legal and accounting fees.

General and administrative

General and administrative expenses increased for the three months ended June 30, 2020 compared to the corresponding quarter in 2019 primarily due to an increase in product development expenses of approximately $0.4 million and costs incurred due to the sequestration of certain of our employees at our manufacturing plant in Louisiana of approximately $0.3 million. Offsetting this increase was a reduction in general and administrative expenses including travel and Board compensation.

Depreciation, amortization, depletion and accretion

Depreciation and amortization expense increased for the three months ended June 30, 2020 compared to the corresponding quarter in 2019 due to higher production volumes during the three months ended June 30, 2019, resulting in $0.7 million more absorption of depreciation in inventory. Further, the addition of long-lived assets at our manufacturing plant in Louisiana in 2020 contributed approximately $0.2 million of depreciation expense for the three months ended June 30, 2020.

Impairment of long-lived assets

As previously discussed, as June 30, 2020, we recorded an impairment charge of $26.1 million for the three months ended June 30, 2020.

Other Income (Expense), net

A summary of the components of other income (expense), net for the three months ended June 30, 2020 and 2019 is as follows:

	Three Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Other income (expense):				
Earnings from equity method investments	$ 8,168	$ 20,935	$ (12,767)	(61)%
Interest expense	(962)	(1,987)	1,025	(52)%
Other	148	60	88	147 %
Total other income	$ 7,354	$ 19,008	$ (11,654)	(61)%

Earnings from equity method investments

The following table details the components of our respective equity method investments included within the Earnings from equity method investments line item in the Condensed Consolidated Statements of Operations:

	Three Months Ended June 30,	
(in thousands)	2020	2019
Earnings from Tinuum Group	$ 6,764	$ 19,244
Earnings from Tinuum Services	1,404	1,693
Loss from other	—	(2)
Earnings from equity method investments	$ 8,168	$ 20,935

Earnings from equity method investments, and changes related thereto, are impacted by our significant equity method investees: Tinuum Group and Tinuum Services.

For the three months ended June 30, 2020, we recognized $6.8 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income for the quarter. For the three months ended June 30, 2019, we recognized $19.2 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income for the quarter.

For the three months ended June 30, 2020, equity earnings from our interest in Tinuum Group were positively impacted by the addition of two new RC facilities during the second half of 2019. However, equity earnings from Tinuum Group for the three months ended June 30, 2020 decreased from the comparable period in 2019 primarily from one new RC facility during the three months ended June 30, 2019 that was recognized as a point-in-time sale. Further, equity earnings from Tinuum Group for the three months ended June 30, 2020 decreased from the comparable quarter in 2019 primarily from higher depreciation recognized of approximately $2.5 million for the three months ended June 30, 2020 on all Tinuum Group RC facilities as a result of a reduction in RC facilities' estimated useful lives as determined by Tinuum Group during the second half of 2019. Further contributing to the decrease in equity earnings quarter over quarter was the restructuring of RC facility leases with Tinuum Group's largest customer, which decreased lease payments and equity earnings beginning in the second half of 2019. We believe the increase in depreciation and the decrease in lease payments will negatively impact equity earnings for the remainder of 2020 as well as 2021.

Further, two coal-fired utilities in which Tinuum Group has invested RC facilities announced expected closures in the fourth quarter of 2019 and the associated leases of those facilities terminated during that period. As a result of higher depreciation, reduced lease payments and closures of two utilities, we expect our pro-rata share of Tinuum Group's earnings and distributions to be lower in future periods.

Equity earnings from our interest in Tinuum Services decreased by $0.3 million for the three months ended June 30, 2020 compared to the three months ended June 30, 2019, and for those quarters, Tinuum Services provided operating and maintenance services to 19 and 20 operating RC facilities, respectively. Tinuum Services derives earnings under fixed-fee arrangements as well as fee arrangements that are based on actual RC production, depending upon the specific RC facility operating and maintenance agreement.

Interest expense

For the three months ended June 30, 2020, interest expense decreased $1.0 million compared to the three months ended June 30, 2019 primarily due to a reduction in interest expense related to a senior term loan (the "Senior Term Loan"), as the principal balance was reduced from payments of $26.0 million quarter over quarter. The remaining decrease in interest expense related to a reduction in the deferred balance related to Internal Revenue Code section 453A ("453A"), which requires taxpayers to pay an interest charge ("453A interest") on the portion of the tax liability that is deferred under the installment method for tax purposes.

Income tax expense

For the three months ended June 30, 2020, we recorded income tax expense of $0.1 million compared to income tax expense of $6.6 million for the three months ended June 30, 2019. The income tax expense recorded for the three months ended June 30, 2020 was comprised of estimated federal income tax expense of $0.3 million and estimated state income tax benefit of $0.2 million. The income tax expense recorded for the three months ended June 30, 2019 was comprised of estimated federal income tax expense of $6.2 million and estimated state income tax expense of $0.4 million.

The decrease in income tax expense quarter over quarter was primarily due to a pretax loss for the three months ended June 30, 2020 of $23.7 million compared to pretax income of $14.7 million for the three months ended June 30, 2019 as well as an increase in the valuation allowance on deferred tax assets of $4.5 million for the three months ended June 30, 2020 compared to an increase in the valuation allowance on deferred tax assets of $4.8 million for the three months ended June 30, 2019. For both quarters, the adjustments to the valuation allowance were based on changes in forecasts as of June 30, 2020 and June 30, 2019, respectively, of future years' taxable income.

Comparison of the Six Months Ended June 30, 2020 and 2019

Total Revenue and Cost of Revenue

A summary of the components of our revenues and cost of revenue for the six months ended June 30, 2020 and 2019 is as follows:

	Six Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Revenues:				
Consumables	$ 17,387	$ 26,495	$ (9,108)	(34)%
License royalties, related party	6,359	8,411	(2,052)	(24)%
Total revenues	$ 23,746	$ 34,906	$ (11,160)	(32)%
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	$ 18,907	$ 26,394	$ (7,487)	(28)%
Other sales cost of revenue, exclusive of depreciation and amortization	$ —	$ 6	$ (6)	(100)%

Consumables and consumables cost of revenue

For the six months ended June 30, 2020, consumables revenues decreased from the comparable period in 2019 primarily due to lower volumes, which were negatively impacted by lower coal-fired power dispatch driven by a decrease of 5.0% in overall power generation as well as an increase in power generation from sources other than coal as a percentage of total generation. Our gross margin, exclusive of depreciation and amortization, was negative for the six months ended June 30, 2020 compared to the corresponding period in 2019 primarily due to the impact of lower sales volumes and the high fixed cost operating structure. Consumables revenue is affected by electricity demand driven by seasonal weather and related power generation needs, as well as competitor prices related to alternative power generation sources such as natural gas. According to data provided by the EIA, for the six months ended June 30, 2020, power generation from coal-fired power dispatch was down approximately 30% compared to the corresponding period in 2019. Due to safety actions taken by the Company to provide for continued operation of our manufacturing facilities in response to COVID-19, cost of revenue increased for the six months ended June 30, 2020.

Consumables cost of revenue was negatively impacted during the six months ended June 30, 2019 due to $5.0 million of costs recognized as a result of the step-up in inventory fair value recorded from the acquisition of Carbon Solutions. As of June 30, 2019, the step-up in inventory was fully recognized in cost of revenue.

License royalties, related party

For the six months ended June 30, 2020 and 2019, there were 21.1 million tons and 20.5 million tons, respectively, of RC produced using the M-45 Technology under the M-45 License. While tonnage increased period over period, there was a reduction in the royalty rate per ton primarily attributable to higher depreciation recognized of approximately $1.5 million on all royalty bearing RC facilities as a result of a reduction in their estimated useful lives as determined by Tinuum Group in the second half of 2019. Further reducing the rate per ton was a decrease in net lease payments of approximately $0.7 million as a result of Tinuum Group restructuring RC facility contracted leases with its largest customer in the second half of 2019. As a result of higher depreciation and lower lease payments, we expect that the lower royalty rate per ton will continue in 2020 and 2021.

Additional information related to revenue concentrations and contributions by class and reportable segment can be found within the segment discussion below and in Note 15 to the Condensed Consolidated Financial Statements.

Other Operating Expenses

A summary of the components of our operating expenses, exclusive of cost of revenue items (presented above), for the six months ended June 30, 2020 and 2019 is as follows:

	Six Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Operating expenses:				
Payroll and benefits	$ 6,554	$ 5,354	$ 1,200	22 %
Legal and professional fees	3,065	4,199	(1,134)	(27)%
General and administrative	4,793	3,909	884	23 %
Depreciation, amortization, depletion and accretion	4,030	2,859	1,171	41 %
Impairment of long-lived assets	26,103	—	26,103	*
	$ 44,545	$ 16,321	$ 28,224	173 %

* Calculation not meaningful

Payroll and benefits

Payroll and benefits expenses increased for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to severance related costs $1.4 million associated with the resignation of an executive officer, offset by a decrease in headcount.

Legal and professional fees

Legal and professional fees expenses decreased for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to decreased outsourced shared service costs, including legal, general consulting and audit fees, of approximately $1.3 million. Offsetting these decreases was an increase in outsourced IT costs specific to the completion of the integration of Carbon Solutions of $0.2 million.

General and administrative

General and administrative expenses increased for the six months ended June 30, 2020 compared to the same period in 2019 primarily due to an increase in product development expenses of approximately $0.7 million and costs incurred due to the sequestration of certain of our employees at our manufacturing plant in Louisiana of approximately $0.3 million. Offsetting this increase was a reduction in general and administrative expenses including travel and Board compensation.

Depreciation and amortization

Depreciation and amortization expense increased for the six months ended June 30, 2020 compared to the same period in 2019 due to higher volumes during the six months ended June 30, 2019 causing $0.6 million more absorption of depreciation in inventory. Further, the addition of long-lived assets at our manufacturing plant in Louisiana in 2020 contributed approximately $0.3 million of depreciation expense for the three months ended June 30, 2020.

Impairment of long-lived assets

As discussed above, as of June 30, 2020, and we recorded an impairment charge of $26.1 million for the six months ended June 30, 2020.

Other Income (Expense), net

A summary of the components of our other income (expense), net for the six months ended June 30, 2020 and 2019 is as follows:

	Six Months Ended June 30,		Change	
(in thousands, except percentages)	2020	2019	($)	(%)
Other income (expense):				
Earnings from equity method investments	$ 16,441	$ 42,625	$ (26,184)	(61)%
Interest expense	(2,172)	(4,091)	1,919	(47)%
Other	191	130	61	47 %
Total other income	$ 14,460	$ 38,664	$ (24,204)	(63)%

Earnings from equity method investments

The following table details the components of our respective equity method investments included within the Earnings from equity method investments line item on the Condensed Consolidated Statements of Operations:

	Six Months Ended June 30,	
(in thousands)	2020	2019
Earnings from Tinuum Group	$ 13,202	$ 39,011
Earnings from Tinuum Services	3,242	3,615
Loss from other	(3)	(1)
Earnings from equity method investments	$ 16,441	$ 42,625

For the six months ended June 30, 2020, we recognized $13.2 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income for the period. For the six months ended June 30, 2019, we recognized $39.0 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income of $40.7 million for the period less the recovery of the cash distributions in excess of the cumulative earnings as of December 31, 2018. The difference between our pro-rata share of Tinuum Group's net income and our earnings from our Tinuum Group equity method investment as reported on the Condensed Consolidated Statements of Operations for the six months ended June 30, 2019 was the result of cumulative distributions received from Tinuum Group being in excess of the carrying value of the investment, and therefore we recognized such excess distributions as equity method earnings in the period the distributions occurred.

For the six months ended June 30, 2020, equity earnings from our interest in Tinuum Group were positively impacted by the addition of two new RC facilities during the second half of 2019. However, equity earnings from Tinuum Group for the six months ended June 30, 2020 decreased from the comparable period in 2019 primarily from two new RC facilities during the six months ended June 30, 2019 that were recognized as point-in-time sales. Further, the decrease in equity earnings was due to higher depreciation recognized of approximately $4.9 million for the six months ended June 30, 2020 on all Tinuum Group RC facilities as a result of a reduction in RC facilities' estimated useful lives as determined by Tinuum Group during the second half of 2019. Further contributing to the decrease in equity earnings for the six months ended June 30, 2020 compared to the six months ended June 30, 2019 was the restructuring of RC facility leases with Tinuum Group's largest customer, which decreased lease payments and equity earnings beginning in the second half of 2019. Furthermore, two coal-fired utilities in which Tinuum Group has invested RC facilities announced expected closures in the fourth quarter of 2019 and the associated leases of those facilities terminated during that period. As a result of higher depreciation, reduced lease payments and closures of two utilities, we expect our pro-rata share of Tinuum Group’s earnings will be lower for the remainder of 2020 as well as 2021.

As of June 30, 2020 and 2019, Tinuum Group had 20 and 21 invested RC facilities, respectively, that were generating revenues.

Equity earnings from our interest in Tinuum Services decreased during the six months ended June 30, 2020 compared to the six months ended June 30, 2019. During the six months ended June 30, 2020 and 2019, Tinuum Services provided operating and maintenance services to 19 and 20 operating RC facilities, respectively, which was the primary driver in the decrease in equity earnings period over period. Tinuum Services derives earnings under fixed-fee arrangements as well as fee arrangements that are based on actual RC production, depending upon the specific RC facility operating and maintenance agreement.

Interest expense

For the six months ended June 30, 2020, interest expense decreased $1.9 million compared to the six months ended June 30, 2019 primarily due to interest expense incurred in the six months ended June 30, 2020 related to the Senior Term Loan, as the principal balance was reduced from payments of $26.0 million period over period. The remaining decrease in interest expense related to lower 453A interest from a reduction in the deferred balance related to 453A.

Income tax expense

For the six months ended June 30, 2020, we recorded income tax expense of $0.5 million compared to income tax expense of $8.3 million for the six months ended June 30, 2019. The income tax expense recorded for the six months ended June 30, 2020 was comprised of estimated federal income tax expense of $0.5 million. The income tax expense recorded for the six months ended June 30, 2019 was comprised of estimated federal income tax expense of $7.0 million and estimated state income tax expense of $1.3 million.

The decrease in income tax expense period over period was primarily due to a pretax loss for the six months ended June 30, 2020 of $25.2 million compared to pretax income for the six months ended June 30, 2019 of $30.8 million. Offsetting the decrease in income tax expense period over period was an increase in the valuation allowance on deferred tax assets of $5.4 million for the six months ended June 30, 2020 compared to an increase in the valuation allowance of $0.8 million for the six months ended June 30, 2019 based on changes in forecasts of future years' taxable income as of June 30, 2020 and June 30, 2019, respectively.

Non-GAAP Financial Measures

To supplement our financial information presented in accordance with accounting principles generally accepted in the U.S. ("GAAP"), we are providing non-GAAP measures of certain financial performance. These non-GAAP measures include Consolidated Adjusted EBITDA, PGI Segment EBITDA and RC Segment Adjusted EBITDA. We have included non-GAAP measures because management believes that they help to facilitate comparison of operating results between periods. We believe the non-GAAP measures provide useful information to both management and users of the financial statements by excluding certain expenses and gains and losses that may not be indicative of core operating results and business outlook. These non-GAAP measures are not in accordance with, or an alternative to, measures prepared in accordance with GAAP and may be different from non-GAAP measures used by other companies. In addition, these non-GAAP measures are not based on any comprehensive set of accounting rules or principles. These measures should only be used to evaluate our results of operations in conjunction with the corresponding GAAP measures.

We define Consolidated Adjusted EBITDA as net income (loss), adjusted for the impact of the following items that are either non-cash or that we do not consider representative of our ongoing operating performance: depreciation, amortization, depletion and accretion, interest expense, net and income tax expense; then reduced by the non-cash impact of equity earnings from equity method investments and increased by cash distributions from equity method investments and impairment of long-lived assets. Because Consolidated Adjusted EBITDA omits certain non-cash items, we believe that the measure is less susceptible to variances that affect our operating performance.

We define PGI Segment Adjusted EBITDA as Segment operating income (loss) adjusted for the impact of the following items that are either non-cash or that we do not consider representative of its ongoing operating performance: depreciation, amortization, depletion and accretion, interest expense, net and impairment of long-lived assets. When used in conjunction with GAAP financial measures, PGI Segment Adjusted EBITDA is a supplemental measure of operating performance that management believes is a useful measure for each of our PGI and RC segment's performance relative to the performance of competitors as well as performance period over period. Additionally, we believe the measure is less susceptible to variances that affect our operating performance results.

We define RC Segment Adjusted EBITDA as RC Segment EBITDA reduced by the non-cash impact of equity earnings from equity method investments and increased by cash distributions from equity method investments.

We present these non-GAAP measures because we believe they are useful as supplemental measures in evaluating the performance of our operating performance and provide greater transparency into the results of operations. Management uses these non-GAAP measures in evaluating the performance of our business.

With the exception of impairment, the adjustments to Consolidated Adjusted EBITDA, PGI Segment Adjusted EBITDA and RC Segment Adjusted EBITDA in future periods are generally expected to be similar. These non-GAAP measures have limitations as analytical tools and should not be considered in isolation or as a substitute for analyzing our results as reported under GAAP.

Consolidated Adjusted EBITDA

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Net (loss) income (1) (2)	$ (23,814)	$ 8,114	$ (25,707)	$ 22,516
Depreciation, amortization, depletion and accretion	1,733	757	4,030	2,859
Interest expense, net	945	1,921	2,113	3,956
Income tax expense	103	6,634	461	8,333
Consolidated EBITDA	(21,033)	17,426	(19,103)	37,664
Impairment	26,103	—	26,103	—
Equity earnings	(8,168)	(20,935)	(16,441)	(42,625)
Cash distributions from equity method investees	15,400	18,600	32,516	38,088
Consolidated Adjusted EBITDA	$ 12,302	$ 15,091	$ 23,075	33,127

(1) Net loss for the three and six months ended June 30, 2020 included $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana. These costs included hazardous pay, lodging expense and other related costs for 30 days.

(2) Net income for the three and six months ended June 30, 2019 included adjustments of $1.4 million and $5.0 million, which increased cost of revenue due to a step-up in basis of inventory acquired related to the acquisition of Carbon Solutions.

Business Segments

As of June 30, 2020, we have two reportable segments: (1) RC and (2) PGI. The business segment measurements provided to and evaluated by our chief operating decision maker are computed in accordance with the principles listed below:

- The accounting policies of the operating segments are the same as those described in the summary of significant accounting policies in the 2019 Form 10-K.
- Segment revenues include equity method earnings and losses from our equity method investments.
- Segment operating income (loss) includes segment revenues and allocation of certain "Corporate general and administrative expenses," which include Payroll and benefits, Rent and occupancy, Legal and professional fees, and General and administrative.
- RC segment operating income includes interest expense directly attributable to the RC segment.

The principal products and services of our segments are:

1. RC - Our RC segment derives its earnings from equity method investments as well as royalty payment streams and other revenues related to enhanced combustion of and reduced emissions of both NO_X and mercury from the burning of coal. Our equity method investments related to the RC segment include Tinuum Group, Tinuum Services and other immaterial equity method investments. Segment revenues include our equity method earnings (losses) from our equity method investments and royalty earnings from Tinuum Group. These earnings are included within the Earnings from equity method investments and License royalties, related party line items in the Condensed Consolidated Statements of Operations. Key drivers to the RC segment performance are the produced and sold RC from both operating and retained RC facilities, royalty-bearing tonnage and the number of operating (leased or sold) and retained RC facilities. These key drivers impact our earnings and cash distributions from equity method investments.
2. PGI - Our PGI segment includes revenues and related expenses from the sale of consumable products that utilize PAC and chemical technologies. These options provide coal-powered utilities and industrial boilers with mercury control solutions working in conjunction with pollution control equipment systems, generally without the requirement for significant ongoing capital outlays. These amounts are included within the respective revenues and cost of revenue line items in the Condensed Consolidated Statements of Operations.

Management uses segment operating income (loss) to measure profitability and performance at the segment level. Management believes segment operating income (loss) provides investors with a useful measure of our operating performance and underlying trends of the businesses. Segment operating income (loss) may not be indicative of our overall consolidated performance and therefore, should be read in conjunction with our Condensed Consolidated Statements of Operations.

The following table presents our operating segment results for the three and six months ended June 30, 2020 and 2019:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2020	2019	2020	2019
Revenues:				
Refined Coal:				
Earnings in equity method investments	$ 8,168	$ 20,935	$ 16,441	$ 42,625
License royalties, related party	3,313	4,191	6,359	8,411
	11,481	25,126	22,800	51,036
Power Generation and Industrials:				
Consumables	7,070	11,049	15,545	25,602
	7,070	11,049	15,545	25,602
Total segment reporting revenues	18,551	36,175	38,345	76,638
Adjustments to reconcile to reported revenues:				
Earnings in equity method investments	(8,168)	(20,935)	(16,441)	(42,625)
Corporate and other	1,100	337	1,842	893
Total reported revenues	$ 11,483	$ 15,577	$ 23,746	$ 34,906
Segment operating income (loss):				
Refined Coal (1)	$ 10,777	$ 24,596	$ 21,637	$ 49,979
Power Generation and Industrials (2)	(25,737)	(3,862)	(32,314)	(7,324)
Total segment operating income	$ (14,960)	$ 20,734	$ (10,677)	$ 42,655

(1) Included in RC segment operating income for the three and six months ended June 30, 2020 is 453A interest expense of zero and $0.2 million, respectively. Included in RC segment operating income for the three and six months ended June 30, 2019 is 453A interest expense of $0.3 million and $0.6 million, respectively.

(2) Included in PGI segment operating loss for the three and six months ended June 30, 2020 is $23.2 million and $23.2 million, respectively, of impairment expense on PGI segment and certain other long-lived assets, and $0.4 million and $0.4 million, respectively, of expenses related to sequestration of certain of our employees at our manufacturing plant in Louisiana. Included in PGI segment operating loss for the three and six months ended June 30, 2020 and 2019 is $1.4 million and $3.4 million, respectively, of depreciation, amortization, and depletion expense on mine and plant long-lived assets. Included in PGI segment operating loss for the three and six months ended June 30, 2019 is approximately $1.3 million and $4.7 million of costs recognized as a result of the step-up in inventory fair value recorded from the acquisition of Carbon Solutions.

RC

The following table details the segment revenues of our respective equity method investments:

	Three Months Ended June 30,	
(in thousands)	2020	2019
Earnings from Tinuum Group	$ 6,764	$ 19,244
Earnings from Tinuum Services	1,404	1,693
Loss from other	—	(2)
Earnings from equity method investments	$ 8,168	$ 20,935

For the three months ended June 30, 2020 and June 30, 2019

RC earnings decreased primarily due to a decrease in equity earnings in Tinuum Group for the three months ended June 30, 2020 compared to the corresponding quarter in 2019.

For the three months ended June 30, 2020, equity earnings from our interest in Tinuum Group were positively impacted by the addition of two new RC facilities during the second half of 2019. However, equity earnings from Tinuum Group for the three months ended June 30, 2020 decreased from the comparable quarter in 2019 primarily from higher depreciation recognized of approximately $2.5 million for the three months ended June 30, 2020 on all Tinuum Group RC facilities as a result of a reduction in RC facilities estimated useful lives as determined by Tinuum Group during the second half of 2019. Further contributing to the decrease in equity earnings quarter over quarter was the restructuring of RC facility leases with Tinuum Group's largest customer, which decreased lease payments and equity earnings beginning in the second half of 2019. We believe the increase in depreciation and the decrease in lease payments will negatively impact equity earnings for the remainder of 2020 as well as 2021.

For the three months ended June 30, 2020 and 2019, we recognized $6.8 million and $19.2 million, respectively, in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income for those quarters.

For the three months ended June 30, 2020, earnings from Tinuum Services decreased compared to the corresponding quarter in 2019 primarily due to a decrease in the number of operating RC facilities in which Tinuum Services provides operating and maintenance services from 20 to 19.

As noted above, for the three months ended June 30, 2020, RC earnings were impacted by a decrease in license royalties earned from Tinuum Group under the M-45 License. For the three months ended June 30, 2020 and 2019, there were 9.2 million tons and 9.6 million tons, respectively, of RC produced using the M-45 Technology. This decrease combined with a lower royalty rate per ton resulted in a decrease in license royalties quarter over quarter. The reduction in the royalty rate per ton was primarily attributable to higher depreciation recognized on all royalty bearing RC facilities as a result of a reduction in their estimated useful lives as determined by Tinuum Group in the second half of 2019. Further reducing the rate per ton was a decrease in net lease payments as a result of Tinuum Group restructuring RC facility contracted leases with its largest customer in the second half of 2019.

Future earnings and growth in the RC segment will continue to be impacted by coal-fired electricity generation dispatch and invested facilities with leases subject to periodic renewals being terminated, repriced, or otherwise subject to renegotiated terms.

Additional discussion of our equity method investments is included above within our consolidated results and in Note 6 of the Condensed Consolidated Financial Statements.

RC Segment Adjusted EBITDA

	Three Months Ended June 30,	
(in thousands)	**2020**	**2019**
RC Segment operating income	$ 10,777	$ 24,596
Depreciation, amortization, depletion and accretion	32	7
Interest expense	28	326
RC Segment EBITDA	10,837	24,929
Equity earnings	(8,168)	(20,935)
Cash distributions from equity method investees	15,400	18,600
RC Segment Adjusted EBITDA	$ 18,069	$ 22,594

PGI

Discussion of revenues derived from our PGI segment and costs related thereto are included above within our consolidated results.

For the three months ended June 30, 2020 and June 30, 2019

PGI segment operating loss increased for the three months ended June 30, 2020 compared to the three months ended June 30, 2019 primarily due to the impairment charge of $23.2 million and a reduction in consumable revenue and associated margins and costs incurred related to COVID-19. For the three months ended June 30, 2020, consumables revenue and margins also continued to be negatively impacted by low coal-fired power dispatch driven by power generation from sources other than coal.

During the three months ended June 30, 2020 , we incurred costs of $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana. These costs included hazardous pay, lodging expense and other related costs for 60 days.

PGI Segment Adjusted EBITDA

(in thousands)	Three Months Ended June 30, 2020	2019
Segment operating loss (1) (2)	$ (25,737)	$ (3,862)
Depreciation, amortization, depletion and accretion	1,389	685
Interest expense, net	93	57
PGI Segment EBITDA loss	(24,255)	(3,120)
Impairment	23,232	—
PGI Segment Adjusted EBITDA loss	$ (1,023)	$ (3,120)

(1) Included in segment operating loss for the three months ended June 30, 2020 is $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana.

(2) Included in segment operating loss for the three months ended June 30, 2019 is approximately $1.3 million of costs recognized as a result of the step-up in inventory fair value recorded from the acquisition of Carbon Solutions.

RC

For the six months ended June 30, 2020 and June 30, 2019

For the six months ended June 30, 2020, we recognized $13.2 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income for the period. For the six months ended June 30, 2019, we recognized $39.0 million in equity earnings from Tinuum Group, which was equal to our proportionate share of Tinuum Group's net income of $40.7 million for the period less the recovery of the cash distributions in excess of the cumulative earnings as of December 31, 2018. The difference between our pro-rata share of Tinuum Group's net income and our earnings from our Tinuum Group equity method investment as reported on the Condensed Consolidated Statements of Operations for the six months ended June 30, 2019 was the result of cumulative distributions received from Tinuum Group being in excess of the carrying value of the investment, and therefore we recognized such excess distributions as equity method earnings in the period the distributions occurred.

For the six months ended June 30, 2020, equity earnings from our interest in Tinuum Group were positively impacted by the addition of two new RC facilities during the second half of 2019. However, equity earnings from Tinuum Group for the six months ended June 30, 2020 decreased from the comparable period in 2019 primarily from two new RC facilities during the six months ended June 30, 2019 that were recognized as point-in-time sales. Further, the decrease in equity earnings was due to higher depreciation recognized of approximately $4.9 million for the six months ended June 30, 2020 on all Tinuum Group RC facilities as a result of a reduction in RC facilities estimated useful lives as determined by Tinuum Group during the second half of 2019. Further contributing to the decrease in equity earnings for the six months ended June 30, 2020 compared to the six months ended June 30, 2019 was the restructuring of RC facility leases with Tinuum Group's largest customer, which decreased lease payments and equity earnings beginning in the second half of 2019. Furthermore, two coal-fired utilities in which Tinuum Group has invested RC facilities announced expected closures in the fourth quarter of 2019 and the associated leases of those facilities terminated during that period. As a result of higher depreciation, reduced lease payments and closures of two utilities, we expect our pro-rata share of Tinuum Group’s earnings will be lower for the remainder of 2020 as well as 2021.

As of June 30, 2020 and 2019, Tinuum Group had 20 and 21 invested RC facilities, respectively, that were generating revenues.

Equity earnings from our interest in Tinuum Services decreased during the six months ended June 30, 2020 compared to the six months ended June 30, 2019. During the six months ended June 30, 2020 and 2019, Tinuum Services provided operating and maintenance services to 19 and 20 operating RC facilities, respectively, which was the primary driver in the decrease in equity earnings. Tinuum Services derives earnings under fixed-fee arrangements as well as fee arrangements that are based on actual RC production, depending on the specific RC facility operating and maintenance agreement.

RC earnings were negatively impacted during the six months ended June 30, 2020 by a decrease in royalties earned from Tinuum Group under the M-45 License. During the six months ended June 30, 2020 and 2019, there were 21.1 million tons and 20.5 million tons, respectively, of RC produced using the M-45 Technology. While tonnage increased period over period, there was a reduction in the royalty rate per ton primarily attributable to higher depreciation recognized of approximately $1.5 million on all royalty bearing RC facilities as a result of a reduction in their estimated useful lives as determined by Tinuum Group in the second half of 2019. Further reducing the rate per ton was a decrease in net lease payments of approximately $0.7 million as a result of Tinuum Group restructuring RC facility contracted leases with its largest customer in the second half of 2019.

Future earnings and growth within the RC segment will continue to be impacted by coal-fired dispatch, and invested facilities with leases subject to periodic renewals being terminated, repriced, or otherwise subject to renegotiated terms.

Additional discussion of our equity method investments is included above within our consolidated results and in Note 6 of the Condensed Consolidated Financial Statements.

	Six Months Ended June 30,	
(in thousands)	**2020**	**2019**
RC Segment operating income	$ 21,637	$ 49,979
Depreciation, amortization, depletion and accretion	59	30
Interest expense	160	648
RC Segment EBITDA	21,856	50,657
Equity earnings	$ (16,441)	$ (42,625)
Cash distributions from equity method investees	$ 32,516	$ 38,088
RC Segment Adjusted EBITDA	$ 37,931	$ 46,120

PGI

Discussion of revenues derived from our PGI segment and costs related thereto are included above within our consolidated results.

For the six months ended June 30, 2020 and June 30, 2019

PGI segment operating loss increased during the six months ended June 30, 2020 compared to the six months ended June 30, 2019 primarily due to the impairment charge of $23.2 million, a reduction in consumable revenue and associated margins and costs incurred related to COVID-19. For the six months ended June 30, 2020, consumables revenue and margins also continued to be negatively impacted by low coal-fired power dispatch driven by power generation from sources other than coal.

During the six months ended June 30, 2020 , we incurred costs of $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana. These costs included hazardous pay, lodging expense and other related costs for 60 days.

PGI Segment Adjusted EBITDA

	Six Months Ended June 30,	
(in thousands)	**2020**	**2019**
PGI Segment operating loss (1) (2)	$ (32,314)	$ (7,324)
Depreciation, amortization, depletion and accretion	3,424	2,645
Interest expense, net	187	188
PGI Segment EBITDA loss	(28,703)	(4,491)
Impairment	23,232	—
PGI Segment Adjusted EBITDA loss	$ (5,471)	$ (4,491)

(1) Included in segment operating loss for the six months ended June 30, 2020 is $0.4 million related to sequestration of certain of our employees at our manufacturing plant in Louisiana.

(2) Segment operating loss for the six months ended June 30, 2019 is inclusive of a $4.7 million adjustment, which increased cost of revenue due to a step-up in basis of inventory acquired related to the acquisition of Carbon Solutions.

Liquidity and Capital Resources

Overview of Factors Affecting Our Liquidity

During the six months ended June 30, 2020, our liquidity position was positively affected primarily due to distributions from Tinuum Group and Tinuum Services, royalty payments from Tinuum Group and borrowing availability under our bank ("Lender") line of credit ("Line of Credit").

Our principal sources of cash included:

- cash on hand;
- distributions from Tinuum Group and Tinuum Services;
- royalty payments from Tinuum Group; and
- cash proceeds received from under the Paycheck Protection Program ("PPP") administered by th U.S. Small Business Administration ("SBA").

Our principal uses of cash for the six months ended June 30, 2020 included:

- payment of dividends;
- payment of debt principal and interest;
- repurchases of shares of common stock; and
- our business operating expenses, including federal and state tax payments, cash severance payments and costs associated with COVID-19.

Our ability to continue to generate sufficient cash flow required to meet ongoing operational needs and obligations, capital expenditures, future potential dividend payments and potential future share repurchases depends on several factors, including executing on our contracts and initiatives, receiving license royalty payments from Tinuum Group and distributions from Tinuum Group and Tinuum Services, and increasing our share of the market for PGI consumables, including expanding our overall PAC business into additional adjacent markets. Increased distributions from Tinuum Group will likely be dependent upon both preserving existing contractual relationships and securing additional tax equity investors for those Tinuum Group facilities that are currently not operating.

We incur significant recurring capital expenditures for our AC manufacturing facility and for mine development at our lignite mine. For 2020, we anticipate that our capital expenditures will be lower than 2019 as we do not anticipate having significant planned maintenance as we incurred in 2019.

Our liquidity was negatively impacted from COVID-19 due to increased operating losses in our PGI segment from higher operating costs as a result of measures taken to support our ability to deliver as a critical infrastructure business, primarily from sequestration efforts and "hazard pay," which is a premium on wages, for a substantial number of our employees, and overall plant operating inefficiencies. However, in April 2020, we took steps to enhance our short-term liquidity through the PPP as discussed below.

Tinuum Group and Tinuum Services Distributions

The following table summarizes the cash distributions from our equity method investments that most significantly affected our consolidated cash flow results for the six months ended June 30, 2020 and 2019:

	Six Months Ended June 30,	
(in thousands)	**2020**	**2019**
Tinuum Group	$ 27,364	$ 33,788
Tinuum Services	5,152	4,300
Distributions from equity method investees	$ 32,516	$ 38,088

Cash distributions from Tinuum Group for the six months ended June 30, 2020 decreased by $6.4 million compared to the six months ended June 30, 2019 primarily due to reductions in lease payments received by Tinuum Group from its largest customer as a result of renegotiations of certain leases, which occurred in the second half of 2019 between Tinuum Group and this customer, and the shuttering of two coal-fired utilities in the fourth quarter of 2019 where two invested RC facilities were operating.

Future cash flows from Tinuum through 2021 are expected to range from $100 to $125 million, a decrease from the previously reported range of $125 to $150 million. The key drivers in achieving these future cash flows are based on the following:

- 20 invested facilities as of June 30, 2020 and inclusive of all net Tinuum cash flows (distributions and license royalties), offset by estimated federal and state income tax payments and 453A interest payments.

Expected future cash flows from Tinuum Group are based on the following key assumptions:

- Tinuum Group continues to not operate retained facilities;
- Tinuum Group does not have material unexpected capital expenditures or unusual operating expenses;
- Tax equity lease renewals on invested facilities are not terminated or repriced; and
- Coal-fired power generation remains consistent with contractual expectations.

PPP Loan

On April 21, 2020, we entered into a loan (the "PPP Loan") under the PPP through BOK, NA dba Bank of Oklahoma (the "Lender") providing for $3.3 million in proceeds, which amount was funded on April 21, 2020. The PPP Loan matures April 21, 2022 and provides for 18 monthly payments of principal and interest commencing on November 21, 2020. The interest rate on the PPP Loan is 1.00%. The PPP Loan is unsecured and contains customary events of default relating to, among other things, payment defaults, making materially false and misleading representations to the SBA or the Lender, or breaching the terms of the PPP Loan. The occurrence of an event of default may result in the repayment of all amounts outstanding, collection of all amounts owing from us, or filing suit and obtaining judgment against us. The PPP Loan may be forgiven subject to the terms of the PPP and approval by the SBA.

Our business has been classified as an essential business and therefore we continue to operate on a modified basis to comply with governmental restrictions and public health authority guidelines. In April 2020, we sequestered approximately 60 employees to continue to run our manufacturing plant and build-up inventory in order to supply our customers. This resulted in additional costs as the sequestered employees received hazard pay. We used proceeds from the PPP Loan to fund these additional employment expenses and other payroll costs.

Senior Term Loan

On December 7, 2018, we and ADA-ES, Inc. ("ADA"), a wholly-owned subsidiary, and certain other subsidiaries of the Company as guarantors, The Bank of New York Mellon as administrative agent, and Apollo Credit Strategies Master Fund Ltd and Apollo A-N Credit Fund (Delaware) L.P. (collectively "Apollo"), affiliates of a beneficial owner of greater than five percent of our common stock and a related party, entered into the Term Loan and Security Agreement (the "Senior Term Loan") in the amount of $70.0 million, less original issue discount of $2.1 million. Proceeds from the Senior Term Loan were used to fund the acquisition of Carbon Solutions as disclosed in Note 4. We also paid debt issuance costs of $2.0 million related to the Senior Term Loan. The Senior Term Loan has a term of 36 months and bears interest at a rate equal to 3-month LIBOR (subject to a 1.5% floor) + 4.75% per annum, which is adjusted quarterly to the current 3-month LIBOR rate, and interest is payable quarterly in arrears. Quarterly principal payments of $6.0 million are required and commenced in March 2019, and we may prepay the Senior Term Loan at any time without penalty. The Senior Term Loan is secured by substantially all of our assets, including the cash flows from Tinuum Group and Tinuum Services (collectively, the "Tinuum Entities"), but excluding our equity interests in those Tinuum entities. During the six months ended June 30, 2020, we made principal payments of $12.0 million.

The Senior Term Loan includes, among others, the following covenants: (1) Beginning December 31, 2018 and as of the end of each fiscal quarter thereafter, we must maintain a minimum cash balance of $5.0 million and shall not permit "expected future net cash flows from the refined coal business" (as defined in the Senior Term Loan) to be less than 1.75 times the outstanding principal amount of the Senior Term Loan; (2) Beginning in January 2019, annual collective dividends and buybacks of shares of our common stock in an aggregate amount, not to exceed $30.0 million, is permitted so long as (a) no default or event of default exists under the Senior Term Loan and (b) expected future net cash flows from the refined coal business as of the end of the most recent fiscal quarter exceed $100.0 million.

Pursuant to entering into the PPP Loan, on April 20, 2020, we and Apollo executed the First Amendment to the Senior Term Loan, which permitted us to enter into the PPP Loan.

Stock Repurchases and Dividends

In November 2018, our Board of Directors (the "Board") authorized us to purchase up to $20.0 million of our outstanding common stock under a stock repurchase program (the "Stock Repurchase Program"), which was to remain in effect until December 31, 2019 unless otherwise modified by the Board. As of November 2019, $2.9 million remained outstanding related to the Stock Repurchase Program. In November 2019, the Board authorized an incremental $7.1 million to the Stock Repurchase Program and provided that it will remain in effect until all amounts are utilized or it is otherwise modified by the Board.

For the six months ended June 30, 2020, under the Stock Repurchase Program, we purchased 20,613 shares of our common stock for cash of $0.2 million, inclusive of commissions and fees. For the six months ended June 30, 2019, under the Stock

Repurchase Program, we purchased 248,591 shares of our common stock for cash of $2.8 million, inclusive of commissions and fees. As of June 30, 2020, we had $7.0 million remaining under the Stock Repurchase Program.

For the six months ended June 30, 2020 and 2019, we declared and paid quarterly cash dividends to stockholders of $4.8 million and $9.2 million, respectively.

Line of Credit

On December 7, 2018, ADA-ES, Inc. ("ADA"), a wholly-owned subsidiary, as borrower, we, as guarantor, and the Lender entered into an amendment to the Line of Credit. This amendment provided, among other things, for ADA to be able to enter into the Senior Term Loan as a guarantor so long as the principal amount of the Senior Term Loan did not exceed $70.0 million. Additionally, the financial covenants in the Line of Credit were amended and restated to be consistent with the Senior Term Loan covenants, including maintaining a minimum cash balance of $5.0 million. The maturity date of the Line of Credit is September 30, 2020.

As of June 30, 2020, we have $5.0 million of borrowing availability and no outstanding borrowings under the Line of Credit.

Sources and Uses of Cash

Six Months Ended June 30, 2020 vs. Six Months Ended June 30, 2019

Cash, cash equivalents and restricted cash increased from $17.1 million as of December 31, 2019 to $21.7 million as of June 30, 2020. The following table summarizes our cash flows for the six months ended June 30, 2020 and 2019, respectively:

	Six Months Ended June 30,		
(in thousands)	2020	2019	Change
Cash and cash equivalents and restricted cash provided by (used in):			
Operating activities	$ 24,085	$ 30,572	$ (6,487)
Investing activities	(4,696)	(4,979)	283
Financing activities	(14,736)	(28,945)	14,209
Net change in cash and cash equivalents and restricted cash	$ 4,653	$ (3,352)	$ 8,005

Cash flow from operating activities

Cash flows provided by operating activities for the six months ended June 30, 2020 decreased by $6.5 million compared to the six months ended June 30, 2019. The net decrease was primarily attributable to a decrease in net income for the six months ended June 30, 2020 compared to net income for the six months ended June 30, 2019 of $48.2 million, a decrease period over period in distributions from equity method investments, return on investment of $5.6 million, and a decrease in the net change in inventories, net of $4.4 million. Offsetting this net decrease in cash flows provided by operating activities was a decrease period over period in earnings from equity method investees of $26.2 million and an increase of $5.0 million in the net change in accrued payroll and related liabilities for the six months ended June 30, 2020 compared to the six months ended June 30, 2019.

Cash flow from investing activities

Cash flows used in investing activities for the six months ended June 30, 2020 decreased by $0.3 million compared to the six months ended June 30, 2019 primarily from a decrease in cash consideration paid for the six months ended June 30, 2019 of $0.7 million related to the acquisition of Carbon Solutions. Offsetting this decrease in cash flows used in investing activities was an increase period over period in capital expenditures related to property, plant equipment and intangibles of $0.4 million.

Cash flow from financing activities

Cash flows used in financing activities for the six months ended June 30, 2020 decreased by $14.2 million compared to the six months ended June 30, 2019 primarily from proceeds received from the PPP Loan of $3.3 million in April 2020 and decreases period over period in dividends of $4.4 million, principal loan repayments on the Senior Term Loan of $4.0 million and repurchases of common shares of $2.7 million.

Contractual Obligations

During the six months ended June 30, 2020, there were no material changes to our contractual obligations outside of the ordinary course of business from those reported as of December 31, 2019.

Off-Balance Sheet Arrangements

During the six months ended June 30, 2020, we did not engage in any off-balance sheet arrangements except those discussed in Item 7 - "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the 2019 10-K.

Critical Accounting Policies and Estimates

Our significant accounting policies and estimates have not changed from those reported in Item 7 - "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the 2019 10-K.

Recently Issued Accounting Standards

Refer to Note 1 of the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report for new accounting standards applicable to us that were issued during the six months ended June 30, 2020 and subsequent thereto through the date of this Quarterly Report.

Forward-Looking Statements Found in this Report

This Quarterly Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that involve risks and uncertainties. In particular, such forward-looking statements are found in this Part I, Item 2 above. Words or phrases such as "anticipates," "believes," "expects," "intends," "plans," "estimates," "predicts," the negative expressions of such words, or similar expressions are used in this Quarterly Report to identify forward-looking statements, and such forward-looking statements include, but are not limited to, statements or expectations regarding:

(a) the scope and impact of mercury and other regulations or pollution control requirements, including the impact of the final MATS;
(b) the production and sale of RC by RC facilities that will qualify for Section 45 tax credits;
(c) expected growth or contraction in and potential size of our target markets;
(d) expected supply and demand for our products and services;
(e) increasing competition in the PGI market;
(f) future level of research and development activities;
(g) the effectiveness of our technologies and the benefits they provide;
(h) Tinuum Group's ability to profitably sell and/or lease additional RC facilities and/or RC facilities that may be returned to Tinuum Group, or to recognize the tax benefits from production and sale of RC on retained RC facilities and the effect of these factors on Tinuum Group's future earnings and distributions;
(i) probability of any loss occurring with respect to certain guarantees made by Tinuum Group;
(j) the timing of awards of, and work and related testing under, our contracts and agreements and their value;
(k) the timing and amounts of or changes in future revenues, royalties earned, backlog, funding for our business and projects, margins, expenses, earnings, tax rates, cash flows, royalty payment obligations, working capital, liquidity and other financial and accounting measures;
(l) the outcome of current legal proceedings;
(m) awards of patents designed to protect our proprietary technologies both in the U.S. and other countries;
(n) whether any legal challenges or EPA actions will have a material impact on the implementation of the MATS or other regulations and on our ongoing business;
(o) the evolving impact and duration of the COVID-19 pandemic to our business;
(p) whether any amounts under the PPP loan will be forgiven;
(q) the tax impact of the use of or forgiveness of funds received or forgiven under the PPP loan; and
(r) the future output of coal-fired power dispatch which affects that demand and future cash flow for our PGI products and may result in future additional impairment of the Asset Group.

The forward-looking statements included in this Quarterly Report involve risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors including, but not limited to, timing of new and pending regulations and any legal challenges to or extensions of compliance dates of them; the U.S. government's failure to promulgate regulations or appropriate funds that benefit our business; availability, cost of and demand for alternative energy sources and other technologies; changes in laws and regulations, accounting rules, prices, economic conditions and market demand; impact of competition; technical, start up and operational difficulties; failure of the RC facilities to produce RC; termination of or amendments to the contracts for sale or lease of RC facilities or such facilities to qualify for Section 45 tax credits; decreases in the production of RC; our inability to commercialize our technologies on favorable terms; our inability to ramp up our operations to effectively address recent and expected growth in our business; our ability to mitigate or manage disruptions posed by COVID-19; the impact of COVID-19 and changes in U.S. economic conditions that materially impact the demand for our products and services, loss of key personnel; potential claims from any terminated employees, customers or vendors; availability of materials and equipment for our businesses; intellectual property infringement claims from third parties; pending litigation; as well as other factors relating to our business, as described in our filings with the SEC, with particular emphasis on the risk factor disclosures contained in those filings. You are cautioned not to place undue reliance on the forward-looking statements made in this Quarterly Report and to consult filings we have made and will make with the SEC for additional discussion concerning risks and uncertainties that may apply to our business and the ownership of our securities. The forward-looking statements contained in this Quarterly Report are presented as of the date hereof, and we disclaim any duty to update such statements unless required by law to do so.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

The information under this Item is not required to be provided by smaller reporting companies.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), we have evaluated, under the supervision of and with the participation of our management, including our principal executive officer and principal financial officer, the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Based upon this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of June 30, 2020.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended June 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time, we are involved in litigation, claims and other proceedings related to the conduct of our business. Information with respect to this item may be found in Note 10 "Commitments and Contingencies" to the consolidated financial statements included in Item 1 of Part I of this Quarterly Report.

Item 1A. Risk Factors

There are no material updates to our risk factors as disclosed in the 2019 Form 10-K except as set forth below. This risk factor should be read together with the risk factors in the 2019 Form 10-K.

The COVID-19 pandemic and ensuing economic downturn has affected, and is expected to continue to affect and pose risks to our business, results of operations, financial condition and cash flows; and other epidemics or outbreaks of infectious diseases may have a similar impact.

In March 2020, the WHO declared the outbreak of COVID-19 a global pandemic, which continues to spread throughout the United States ("U.S.") and the world and has resulted in authorities implementing numerous measures to contain the virus, including travel bans and restrictions, quarantines, shelter-in-place orders, and business limitations and shutdowns. We have been designated by CISA as a critical infrastructure supplier to the energy sector. This designation provides some latitude in continuing to conduct our business operations compared to companies in other industries and markets. While we are unable to accurately predict the full impact that COVID-19 will have on our results from operations, financial condition, liquidity and cash flows due to numerous uncertainties, including the duration and severity of the pandemic and containment measures, our compliance with these measures has impacted our day-to-day operations and could disrupt our business and operations, as well as that of our key customers, suppliers and other counterparties, for an indefinite period of time. To support the health and well-being of our employees, customers, partners and communities, a vast majority of our employees not directly involved in operating our plant, have been working remotely since March 2020. In addition, many of our customers are working remotely, which may delay the timing of some orders and deliveries expected in the second quarter of 2020 and beyond. The disruptions to our operations caused by COVID-19 may result in inefficiencies, delays and additional costs in our manufacturing, sales, marketing, and customer service efforts that we cannot fully mitigate through remote or other alternative work arrangements. Although such disruptions did not have a material adverse impact on our financial results for the first quarter of fiscal 2020, we incurred additional operating costs for the second quarter of fiscal year 2020, which included hazard pay, cleaning costs and sequestration costs related to our operating plant personnel. For the balance of 2020, we may see reduced demand for our products due to reduced interaction with our customers and our inability to target new customers and markets.

More generally, the pandemic raises the possibility of an extended global economic downturn and has caused volatility in financial markets, which could affect demand for our products and services and impact our results and financial condition even after the pandemic is contained and the shelter-in-place orders are lifted. For example, a decrease in orders in a given period could negatively affect our revenues in future periods, particularly if experienced on a sustained basis. We will continue to evaluate the nature and extent of the impact of COVID-19 to our business.

As previously disclosed, in April 2020, we entered into a loan (the "PPP Loan") in the amount of $3.3 million through a bank under the Paycheck Protection Program sponsored by the U.S. Small Business Administration ("SBA"). The PPP loan became available to us pursuant to the Coronavirus Aid, Relief, and Economic Security Act and is administered by the SBA. We entered into the PPP Loan to provide additional liquidity in light of our COVID-19-related higher employee costs. Proceeds from the PPP Loan were used to cover a portion of our existing payroll and related expenses, including sequestration pay for certain employees, as well as certain other operating costs as permitted under the Paycheck Protection Program. We expect that current cash and cash equivalent balances, inclusive of the PPP Loan, and cash flows that are generated from operations will be sufficient to meet our working capital needs and other capital and liquidity requirements for at least the next 12 months. However, if our business is more adversely impacted by COVID-19 than expected, and our personnel costs remain higher than budgeted, our cash needs could increase.

Further, we assessed the impact on our existing internal control over financial reporting as of March 31, 2020 and going forward under the current state of COVID-19. We performed procedures to ensure that existing internal control over financial reporting was operating effectively as March 31, 2020 and will continue to operate effectively for the foreseeable future. Such procedures included, but were not limited to, developing a COVID- 19 risk assessment identifying the risks of fraud, changes required in our internal control framework as well as other business information technology and cybersecurity risks. As a result of these procedures and conclusions reached, we did not implement any changes to our internal control over financial reporting as of June 30, 2020.

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

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

The statement 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 is included in Exhibit 95.1 to this Quarterly Report.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit No.	Description	Form	File No.	Incorporated by Reference Exhibit	Filing Date
4.1	Third Amendment to Tax Asset Protection Plan dated as of April 8, 2020, by and between the Company and Computershare Trust Company, N.A., as rights agent	8-K	001-37822	4.3	April 9, 2020
10.1	Promissory Note of the Company dated April 21, 2020, made under the Paycheck Protection Program sponsored by the U.S. Small Business Administration through BOK, NA dba Bank of Oklahoma	8-K	001-37822	10.1	April 22, 2020
10.2	First Amendment to Term Loan and Security Agreement dated April 20, 2020, among the Company, the Company's Subsidiaries named therein, the Lenders named therein and The Bank of New York Mellon as administrative agent to the Lenders	8-K	001-37822	10.2	April 22, 2020
10.3	Release of Claims and Separation Agreement dated as of June 30, 2020, between the Company and Heath Sampson*				
10.4	Advisor Services Agreement dated as of July 1, 2020, between the Company and Heath Sampson*				
31.1	Certification of Principal Executive Officer of Advanced Emissions Solutions, Inc. Pursuant to 17 CFR 240.13a-14(a) or 17 CFR 240.15d-14(a)*				
31.2	Certification of Principal Financial Officer of Advanced Emissions Solutions, Inc. Pursuant to 17 CFR 240.13a-14(a) or 17 CFR 240.15d-14(a)*				
32.1	Certification of Principal Executive Officer and Principal Financial Officer of Advanced Emissions Solutions, Inc. Pursuant to 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*				
95.1	Mine Safety Disclosure Exhibit*				
101. INS	XBRL Instance Document				
101.SCH	XBRL Schema Document				
101.CAL	XBRL Calculation Linkbase Document				
101.LAB	XBRL Label Linkbase Document				
101.PRE	XBRL Presentation Linkbase Document				
101.DEF	Taxonomy Extension Definition Linkbase Document				

Notes:

* – Filed herewith.

** – Portions of this exhibit have been omitted pursuant to a request for confidential treatment.

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.

Advanced Emissions Solutions, Inc.
(Registrant)

August 10, 2020

By: /s/ Greg P. Marken
Greg P. Marken
Interim Chief Executive Officer
(Principal Executive Officer)

August 10, 2020

By: /s/ Christine A. Bellino
Christine A. Bellino
Chief Accounting Officer
(Principal Financial and Accounting Officer)