

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, 2023
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
(State or other jurisdiction of
incorporation or organization)

27-5472457
(I.R.S. Employer
Identification No.)

8051 E. Maplewood Ave, Suite 210, Greenwood Village, CO
(Address of principal executive offices)

80111
(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 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 such files). Yes No

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

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

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

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

Yes No

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 3, 2023, there were 32,748,507 outstanding shares of Advanced Emissions Solutions, Inc. common stock, par value \$0.001 per share.

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Part I. – FINANCIAL INFORMATION

Item 1. Consolidated Financial Statements

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

<i>(in thousands, except share data)</i>	As of	
	June 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash	\$ 58,770	\$ 66,432
Receivables, net	10,307	13,864
Inventories, net	23,038	17,828
Prepaid expenses and other current assets	7,554	7,538
Total current assets	<u>99,669</u>	<u>105,662</u>
Restricted cash, long-term	8,813	10,000
Property, plant and equipment, net of accumulated depreciation of \$15,463 and \$11,897, respectively	81,008	34,855
Other long-term assets, net	44,224	30,647
Total Assets	<u>\$ 233,714</u>	<u>\$ 181,164</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	\$ 15,965	\$ 16,108
Current portion of debt obligations	1,594	1,131
Other current liabilities	6,375	6,645
Total current liabilities	<u>23,934</u>	<u>23,884</u>
Long-term debt obligations, net of current portion	19,830	3,450
Other long-term liabilities	15,135	13,851
Total Liabilities	<u>58,899</u>	<u>41,185</u>
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock: par value of \$0.001 per share, 50,000,000 shares authorized including Series A Convertible Preferred Stock: par value \$0.001 per share, 8,900,000 shares authorized, none issued and outstanding	—	—
Common stock: par value of \$0.001 per share, 100,000,000 shares authorized, 37,194,159 and 23,788,319 shares issued, and 32,576,013 and 19,170,173 shares outstanding at June 30, 2023 and December 31, 2022, respectively	37	24
Treasury stock, at cost: 4,618,146 and 4,618,146 shares as of June 30, 2023 and December 31, 2022, respectively	(47,692)	(47,692)
Additional paid-in capital	152,042	103,698
Retained earnings	70,428	83,949
Total Stockholders' Equity	<u>174,815</u>	<u>139,979</u>
Total Liabilities and Stockholders' Equity	<u>\$ 233,714</u>	<u>\$ 181,164</u>

See Notes to the Condensed Consolidated Financial Statements

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

<i>(in thousands, except per share data)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Revenues:				
Consumables	\$ 20,445	\$ 24,739	\$ 41,250	\$ 51,141
Total revenues	20,445	24,739	41,250	51,141
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	15,336	19,910	32,511	41,417
Payroll and benefits	3,555	2,519	8,254	5,145
Legal and professional fees	1,868	1,555	6,406	3,727
General and administrative	3,345	1,869	6,123	3,795
Depreciation, amortization, depletion and accretion	2,428	1,588	4,565	3,094
Gain on sale of Marshall Mine, LLC	—	—	(2,695)	—
Other	—	34	—	34
Total operating expenses	26,532	27,475	55,164	57,212
Operating loss	(6,087)	(2,736)	(13,914)	(6,071)
Other income (expense):				
Earnings from equity method investments	462	2,389	1,100	3,222
Interest expense	(834)	(90)	(1,368)	(176)
Other	603	111	785	(334)
Total other income	231	2,410	517	2,712
Loss before income taxes	(5,856)	(326)	(13,397)	(3,359)
Income tax benefit	—	—	33	—
Net loss	\$ (5,856)	\$ (326)	\$ (13,364)	\$ (3,359)
Loss per common share (Note 1):				
Basic	\$ (0.21)	\$ (0.02)	\$ (0.53)	\$ (0.18)
Diluted	\$ (0.21)	\$ (0.02)	\$ (0.53)	\$ (0.18)
Weighted-average number of common shares outstanding:				
Basic	27,360	18,473	25,739	18,409
Diluted	27,360	18,473	25,739	18,409

See Notes to the Condensed Consolidated Financial Statements.

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

<i>(Amounts in thousands, except share data)</i>	Common Stock		Treasury Stock		Additional Paid- in Capital	Retained Earnings	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Balances, January 1, 2023	23,788,319	\$ 24	(4,618,146)	\$ (47,692)	\$ 103,698	\$ 83,949	\$ 139,979
Stock-based compensation	483,242	—	—	—	563	—	563
Issuance of common stock pursuant to Arq Acquisition, net of offering costs	3,814,864	4	—	—	12,433	—	12,437
Issuance of common stock related to PIPE Investment, net of offering costs	3,842,315	4	—	—	15,216	—	15,220
Issuance of warrant	—	—	—	—	826	—	826
Repurchase of common shares to satisfy minimum tax withholdings	(74,104)	—	—	—	(146)	—	(146)
Preferred stock dividends declared on redeemable preferred stock	—	—	—	—	—	(157)	(157)
Net loss	—	—	—	—	—	(7,508)	(7,508)
Balances, March 31, 2023	31,854,636	\$ 32	(4,618,146)	\$ (47,692)	\$ 132,590	\$ 76,284	\$ 161,214
Stock-based compensation	(16,430)	—	—	—	545	—	545
Issuance of common stock upon conversion of preferred stock	5,362,926	5	—	—	18,921	—	18,926
Repurchase of common shares to satisfy minimum tax withholdings	(6,973)	—	—	—	(14)	—	(14)
Net loss	—	—	—	—	—	(5,856)	(5,856)
Balances, June 30, 2023	37,194,159	\$ 37	(4,618,146)	\$ (47,692)	\$ 152,042	\$ 70,428	\$ 174,815

<i>(Amounts in thousands, except share data)</i>	Common Stock		Treasury Stock		Additional Paid- in Capital	Retained Earnings	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Balances, January 1, 2022	23,460,212	\$ 23	(4,618,146)	\$ (47,692)	\$ 102,106	\$ 92,864	\$ 147,301
Stock-based compensation	323,742	1	—	—	463	—	464
Repurchase of common shares to satisfy minimum tax withholdings	(59,736)	—	—	—	(382)	—	(382)
Net loss	—	—	—	—	—	(3,033)	(3,033)
Balances, March 31, 2022	23,724,218	\$ 24	(4,618,146)	\$ (47,692)	\$ 102,187	\$ 89,831	\$ 144,350
Stock-based compensation	(30,459)	—	—	—	484	—	484
Repurchase of common shares to satisfy minimum tax withholdings	(551)	—	—	—	(3)	—	(3)
Net loss	—	—	—	—	—	(326)	(326)
Balances, June 30, 2022	23,693,208	\$ 24	(4,618,146)	\$ (47,692)	\$ 102,668	\$ 89,505	\$ 144,505

See NOTES to the Condensed Consolidated Financial Statements.

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

<i>(in thousands)</i>	Six Months Ended June 30,	
	2023	2022
Cash flows from operating activities		
Net loss	\$ (13,364)	\$ (3,359)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Depreciation, amortization, depletion and accretion	4,565	3,094
Gain on sale of Marshall Mine, LLC	(2,695)	—
Operating lease expense	1,449	1,300
Stock-based compensation expense	1,108	948
Earnings from equity method investments	(1,100)	(3,222)
Amortization of debt discount and debt issuance costs	244	—
Other non-cash items, net	3	483
Changes in operating assets and liabilities:		
Receivables and related party receivables	3,622	2,444
Prepaid expenses and other assets	2,213	(779)
Inventories, net	(4,946)	(4,079)
Other long-term assets, net	(2,886)	2,942
Accounts payable and accrued expenses	(10,114)	(2,509)
Other current liabilities	83	(450)
Operating lease liabilities	398	1,999
Other long-term liabilities	261	649
Distributions from equity method investees, return on investment	—	2,297
Net cash (used in) provided by operating activities	(21,159)	1,758
Cash flows from investing activities		
Acquisition of property, plant, equipment, and intangible assets, net	(10,383)	(2,889)
Cash and restricted cash acquired in business acquisition	2,225	—
Payment for disposal of Marshall Mine, LLC	(2,177)	—
Acquisition of mine development costs	(1,247)	(326)
Distributions from equity method investees in excess of cumulative earnings	1,100	3,316
Proceeds from sale of property and equipment	—	1,204
Net cash (used in) provided by investing activities	(10,482)	1,305
Cash flows from financing activities		
Net proceeds from common stock issuance	15,220	—
Net proceeds from Term Loan, related party, net of discount and issuance costs	8,522	—
Principal payments on finance lease obligations	(577)	(594)
Principal payments on Arq Loan	(213)	—
Repurchase of common stock to satisfy tax withholdings	(160)	(385)
Dividends paid on common stock	—	(45)
Net cash provided by (used) in financing activities	22,792	(1,024)
(Decrease) increase in Cash and Restricted Cash	(8,849)	2,039
Cash and Restricted Cash, beginning of period	76,432	88,780
Cash and Restricted Cash, end of period	\$ 67,583	\$ 90,819
Supplemental disclosure of non-cash investing and financing activities:		
Equity issued as consideration for acquisition of business	\$ 31,206	\$ —
Change in accrued purchases for property and equipment	\$ 328	\$ 173
Paid-in-kind dividend on Series A Preferred Stock	\$ 157	\$ —
Acquisition of property and equipment under finance lease	\$ —	\$ 1,641

See Notes to the Condensed Consolidated Financial Statements.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

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, manufacturing and logistics operations located in Louisiana and a manufacturing facility located in Kentucky. The Company is an environmental technology company and has been principally engaged in the sale of consumable air and water treatment solutions including activated carbon ("AC") and chemical technologies. The Company's proprietary technologies in the advanced purification technologies ("APT") market enable customers to reduce air and water contaminants, including mercury and other pollutants, to maximize utilization levels and to improve operating efficiencies to meet the challenges of existing and pending air quality and water regulations. The Company manufactures and sells AC and other chemicals used to capture and remove contaminants for coal-fired power generation, industrial and water treatment markets. The Company also owns an associated lignite mine ("Five Forks Mine") that currently supplies the primary raw material for manufacturing AC.

Acquisition

On February 1, 2023 (the "Acquisition Date"), the Company entered into a Securities Purchase Agreement (the "Purchase Agreement") with Arq Limited ("Arq Ltd."), a company incorporated under the laws of Jersey, pursuant to which the Company acquired all of the direct and indirect equity interests of Arq Ltd.'s subsidiaries (the "Arq Acquisition," and hereafter referred to as "Arq") in exchange for consideration (the "Purchase Consideration") totaling \$31.2 million, and consisting of (i) 3,814,864 shares of the Company's common stock, par value \$0.001 per share (the "Common Stock") and (ii) 5,294,462 preferred shares (the "Preferred Shares") of the Company's Series A Convertible Preferred Stock, par value \$0.001 per share (the "Series A Preferred Stock").

Arq's principal office is located in London, United Kingdom with an additional office located in Corbin, Kentucky near its production facility ("the Corbin Facility"). The Corbin location consists of bituminous coal reserves and a manufacturing facility to recover and purify the bituminous coal fines for sale or further conversion to value-added specialty chemicals. Arq is a pre-revenue, environmental technology company that has developed a process for transforming coal waste into a purified, microfine carbon powder, known as Arq powder™ ("Arq Powder"). The Company expects to begin using Arq Powder to produce granular activated carbon ("GAC") products in the second half of 2024.

See further discussion of the Arq Acquisition in Note 2.

Loan Agreement

As required under the Purchase Agreement, and on February 1, 2023 (the "Closing Date"), the Company, as borrower, certain of its subsidiaries, as guarantors, and CF Global ("CFG"), a related party, as administrative agent and lender (the "Lender"), entered into a term loan (the "Term Loan") in the amount of \$10.0 million, less original issue discount ("OID") of \$0.2 million, upon execution of a Term Loan and Security Agreement (the "Loan Agreement"). The Company received net cash proceeds of \$8.5 million after deducting the OID and debt issuance costs of \$1.3 million.

The Loan Agreement also provides for the issuance of a warrant (the "Warrant") to CFG to purchase 325,457 shares of Common Stock (the "Warrant Shares"), which represented 1% of the post-Arq Acquisition and PIPE Investment (as defined below) fully diluted share capital (as defined in the Loan Agreement), at an exercise price of \$0.01 per share. The Warrant has a term of 7 years and contains a cashless exercise provision.

See further discussion of the Term Loan in Note 6.

Equity Financing

On February 1, 2023, the Company entered into Subscription Agreements with certain persons (the "Subscribers"), which included existing shareholders of Arq Ltd., three of which were appointed to the Company's Board of Directors (the "Board"), pursuant to which the Subscribers subscribed for and purchased shares of Common Stock for an aggregate purchase price of \$15.4 million and at a price per share of \$4.00 (such transaction, the "PIPE Investment").

See further discussion of the PIPE Investment in Note 11.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

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 and TINUUM Services, 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 should be read in conjunction with the Company's Annual Report on Form 10-K for the year ended December 31, 2022 (the "2022 Form 10-K"). Significant accounting policies disclosed therein have not changed.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed using the weighted-average number of shares of common stock outstanding during the reporting period. Diluted earnings (loss) per share is computed in a manner consistent with that of basic earnings per share, while considering other potentially dilutive securities.

For the three and six months ended June 30, 2023 and 2022, potentially dilutive securities consist of unvested restricted stock awards ("RSAs") and contingent performance stock units ("PSUs").

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

<i>(in thousands, except per share amounts)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net loss	\$ (5,856)	\$ (326)	\$ (13,364)	\$ (3,359)
Less: Dividends declared on redeemable preferred stock	—	—	157	—
Loss attributable to common stockholders	\$ (5,856)	\$ (326)	\$ (13,521)	\$ (3,359)
Basic weighted-average common shares outstanding	27,360	18,473	25,739	18,409
Add: dilutive effect of equity instruments	—	—	—	—
Diluted weighted-average shares outstanding	27,360	18,473	25,739	18,409
Loss per share - basic	\$ (0.21)	\$ (0.02)	\$ (0.53)	\$ (0.18)
Loss per share - diluted	\$ (0.21)	\$ (0.02)	\$ (0.53)	\$ (0.18)

For the three and six months ended June 30, 2023 and 2022, potentially dilutive securities of 1.1 million and 0.9 million, and 0.8 million and 0.7 million shares of common stock, respectively, were outstanding but were not included in the calculation of diluted net loss 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 2022 Form 10-K. Actual results could differ from these estimates.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Risks and Uncertainties

For 2023, the Company is principally dependent on the operations of its APT business and its cash on hand to provide liquidity over the near and long term. 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. During periods of low natural gas prices, natural gas provides a competitive alternative to coal-fired power generation and therefore, coal consumption for purposes of power generation may be reduced, which in turn reduces the demand for the Company's products. However, during periods of higher prices for competing power generation sources, there is an increase in coal consumption and thus demand for the Company's products also increases.

In addition, coal consumption for purposes of power generation and demand for the Company's products are affected by the demand for electricity, which is higher in the warmer and colder months of the year. As a result, the Company's interim period results are subject to seasonal variations whereby its revenues and cost of revenues tend to be higher in its first and third fiscal quarters compared to its second and fourth fiscal quarters. Abnormal temperatures during the summer and winter months may significantly affect coal consumption and impurities within various municipalities' water sources, and thus impact the demand for the Company's products.

Concentration of credit risk

The Company is exposed to concentrations of credit risk primarily related to cash held at financial institutions and accounts receivable. The Company regularly monitors its credit risk to mitigate the possibility of current and future exposures resulting in a loss. Historically, the losses related to credit risk have been immaterial.

The Company evaluates the creditworthiness of its customers prior to entering into agreements to sell its products and, as necessary, throughout the life of the customer relationship.

The Company holds substantially all of its cash at one financial institution as of June 30, 2023. If a financial 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.

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.

Note 2 - Arq Acquisition

As of the Acquisition Date, the Company accounted for the Arq Acquisition as an acquisition of a business. The total Purchase Consideration was \$31.2 million and was allocated to the acquired assets and assumed liabilities of Arq based on their estimated fair values as of the Acquisition Date. The Purchase Consideration was comprised of the fair values as of the Acquisition Date of 3,814,864 shares of Common Stock, valued at \$12.4 million, and 5,294,462 Preferred Shares, valued at \$18.8 million. The Company also incurred \$8.7 million in acquisition-related costs, which were expensed as incurred and included in the "General and administrative" and "Legal and professional fees" line items in the Statements of Operations.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

The following table provides the final purchase price allocation to the assets acquired and liabilities assumed as of the Acquisition Date:

<i>(in thousands)</i>	Purchase Price Allocation
Fair value of assets acquired:	
Cash	\$ 1,411
Prepaid expenses and other current assets	2,229
Restricted cash, long-term	814
Property, plant and equipment, net	39,159
Other long-term assets, net	11,717
Amount attributable to assets acquired	<u>55,330</u>
Fair Value of liabilities assumed:	
Accounts payable and accrued expenses	9,806
Current portion of long-term debt	494
Other current liabilities	103
Long-term debt, net of current portion	9,199
Other long-term liabilities	4,523
Amount attributable to liabilities assumed	<u>24,125</u>
Net assets acquired	<u>\$ 31,205</u>

The following represents the intangible asset identified as part of the Arq Acquisition and which is included in "Other long-term-assets, net" in the table above:

<i>(in thousands)</i>	Amount	Weighted Average Useful Life (years)
Developed technology	\$ 7,700	20

Series A Preferred Stock

In connection with the issuance of the Series A Preferred Stock pursuant to the Purchase Agreement, the Company filed the Certificate of Designations of Preferred Stock for the Series A Preferred Stock (the "Certificate of Designations") with the Secretary of State of the State of Delaware. Under the Certificate of Designations, 8.9 million preferred shares were designated as Series A Preferred Stock.

On June 13, 2023 (the "Conversion Date"), the Company's stockholders approved the conversion of all of the outstanding shares of Series A Preferred Stock, including the "Escrow Shares," as defined below, and the corresponding issuance of shares of Common Stock. Upon such approval, each outstanding share of Series A Preferred Stock was automatically converted into the number of shares of Common Stock described below. Each share of Series A Preferred Stock was deemed to have an original issue price of \$4.00 per share (the "Original Issue Amount"). The number of shares of Common Stock issued upon conversion of each share of Series A Preferred Stock was equal to the product of (i) the sum of (A) the Original Issue Amount plus (B) an amount equal to the cumulative amount of the accrued and unpaid dividends on such share at such time divided by (ii) the Original Issue Amount, subject to adjustment.

Holders of the Series A Preferred Stock were entitled to receive cumulative dividends, which accrued quarterly on the last day of each applicable quarter (whether or not declared or funds for their payment are lawfully available) and were payable quarterly, in arrears, on the earlier to occur of (a) the date any dividend is paid to holders of Common Stock with respect to such quarter and (b) 30 days after the end of each quarter (the "Series A Quarterly Dividend") at the rate per share of Series A Preferred Stock equal to the greater of (i) if the Company declared a cash dividend on the Common Stock with respect to such quarter, the amount of the cash dividend that would be received by a holder of Common Stock in which such share of Series A Preferred Stock would be convertible on the record date for such cash dividend and (ii) an annual rate (the "Rate") of 8.0% of the Original Issue Amount compounded quarterly with respect to such quarter.

Advanced Emissions Solutions, Inc. and Subsidiaries
Notes to Condensed Consolidated Financial Statements
(Unaudited)

On March 31, 2023, the Company declared a dividend of 68,464 Series A PIK Shares with respect to the accrued dividends on the Preferred Shares for the first quarter of 2023 (the "First Quarter PIK Dividend"). The First Quarter PIK Dividend was recorded at the estimated fair value of \$0.2 million as of March 31, 2023 and was paid on April 21, 2023.

Under the terms of the Purchase Agreement, a total of 833,914 Preferred Shares, were held in escrow (the "Escrow Shares") based on a contingent redemption feature, (the "Contingent Redemption Feature," as defined below). The fair value of the Preferred Shares issued was determined to be \$3.46 per Preferred Share on the Acquisition Date (the "Preferred Share Price") plus the value of the Contingent Redemption Feature related to the Escrow Shares. The Escrow Shares were converted into shares of Common Stock on the Conversion Date and continue to be held in escrow (the "Escrow Common Shares")

The Escrow Common Shares are being withheld pending a determination by the IRS that no tax withholding is required on the Purchase Consideration issued to Arq Ltd. (the "Arq Ltd. Tax Liability"). The Company estimated the fair value of the potential Arq Ltd. Tax Liability at \$3.3 million. In the event that the IRS determines that no withholding is required by Arq Ltd. in connection with the Purchase Consideration received by Arq Ltd., all of the Escrow Common Shares will be released and delivered to Arq Ltd. In the event that the IRS determines that any amount of withholding is required by Arq Ltd., the Company has agreed to redeem a sufficient number of Escrow Common Shares to fund the required payment to the IRS, and that number of Escrow Common Shares will be returned to the Company (the "Contingent Redemption Feature"). The number of Escrow Common Shares to be returned to the Company is equal to the required withholding amount divided by the Original Issue Amount, not to exceed a maximum of 833,914 Escrow Common Shares, and is equal to \$3.3 million based on the Original Issue Amount (the "Maximum Contingent Redemption Amount"). The fair value of the Escrow Shares was determined on the Acquisition Date and was comprised of the Maximum Contingent Redemption Amount and the fair value of the non-escrowed Preferred Shares ("Non Escrow Shares").

The Series A Preferred Stock contained a mandatory redemption feature in the event the Preferred Shares, including future issuances of Series A Preferred Stock issued under dividend requirements, were not converted into shares of Common Stock prior to February 1, 2028. The Company concluded that both the Escrow Shares and the Non Escrow Shares did not meet the definition of mandatorily redeemable financial instruments as there was not a substantive conversion feature, and were therefore not classified as liabilities. As both the Escrow Shares and Non Escrow Shares represented financial instruments that were redeemable for cash, SEC guidance mandates that preferred securities which are redeemable upon the occurrence of an event that is not solely within the control of the issuer be classified outside of permanent equity as "temporary equity." Accordingly, the Company classified and reported the Series A Preferred Stock as temporary equity and in the Consolidated Balance Sheet as of as of March 31, 2023. On the Conversion Date, all shares of Series A Preferred Stock were converted into shares of Common Stock, and the Company reclassified all of the Series A Preferred Stock to Common Stock as of June 30, 2023.

Other

The amounts of year to date revenues and net loss for Arq for the period from the Acquisition Date to June 30, 2023 are as follows:

<i>(in thousands)</i>	Six Months Ended June 30,	
	2023	
Revenues	\$	—
Net loss	\$	(6,756)

The following represents the pro forma effects of the Arq Acquisition as if it had occurred on January 1, 2022. The pro forma net loss for each of the two periods presented has been calculated after applying the Company's accounting policies in effect for those periods. In addition, pro forma net loss includes: (1) for the six months ended June 30, 2022, an increase in Payroll and benefits for compensation expense of \$1.9 million payable to certain Arq employees, triggered by change in control provisions in employment agreements and employee severance agreements that has not been recognized in the historical financial statements, assuming such amounts will be paid in cash; (2) for the six months ended June 30, 2023 and 2022, a decrease in depreciation and amortization of \$0.2 million and \$0.6 million, respectively, resulting from fair value adjustments to Property, plant, equipment; (3) for the six months ended June 30, 2023 and 2022, an increase in amortization of \$0.1 million and \$0.2 million, respectively, resulting from fair value adjustments to intangible assets; (4) for the six months ended June 30, 2023 and 2022, increases to Interest expense of \$0.2 million and \$0.3 million, respectively, for: (a) the issuance of the Term Loan (as defined below) including stated interest and the amortization of the Term Loan's discount and issuance costs and (b) amortization of debt discount related to a fair value adjustment to an assumed term loan of Arq; and (5) the removal of \$6.2 million of transaction costs incurred for the period from July 1, 2022 to June 30, 2023 but included as additional transaction costs for the six months ended June 30, 2022, together with the income tax effects on (1) through (5). Since Arq had

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no revenues for the six months ended June 30, 2023 or 2022, pro forma revenues are the same as the Company's reported revenues for those periods.

<i>(in thousands)</i>	Six Months Ended June 30,			
	2023		2022	
Revenues	\$	41,250	\$	51,141
Net loss	\$	(9,925)	\$	(38,965)

Note 3 - Marshall Mine

On March 27, 2023, (the "MM Closing Date"), the Company completed the sale of all of its membership interests in Marshall Mine, LLC to a third party (the "Buyer") in exchange for cash payment of \$2.2 million (the "MM Purchase Price") made by the Company to the Buyer and the assumption by the Buyer of certain liabilities of Marshall Mine, LLC. As of the MM Closing Date, Marshall Mine, LLC had outstanding liabilities of approximately \$4.9 million that were discharged upon payment of the MM Purchase Price by the Company, and the Company recognized a gain of approximately \$2.7 million in the Statement of Operations for the six months ended June 30, 2023.

Note 4 - 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 - 45 days 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.

Contract liabilities are comprised of deferred revenue, which represents an obligation to transfer goods or services to a customer for which the Company has received consideration from the customer and, if deliverable within one year or less, is included in "Other current liabilities" in the Condensed Consolidated Balance Sheets and, if deliverable outside of one year, is included in "Other long-term liabilities" in the Condensed Consolidated Balance Sheets.

The following table shows the components of the Company's Receivables, net:

<i>(in thousands)</i>	As of			
	June 30, 2023		December 31, 2022	
Trade receivables, net	\$	10,235	\$	13,789
Other receivables		72		75
Receivables, net	\$	10,307	\$	13,864

For the three and six months ended June 30, 2023 and 2022, all material performance obligations related to revenues recognized were satisfied at a point in time. For the three and six months ended June 30, 2023, approximately 5% and 9% , respectively, of Consumables revenues were generated in Canada, and all other revenues were generated in the U.S. For the three and six months ended June 30, 2022, approximately 8% and 9% respectively, of Consumables revenues were generated in Canada, and all other revenues were generated in the U.S.

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, 2023 and December 31, 2022:

<i>(in thousands)</i>	As of			
	June 30, 2023		December 31, 2022	
Product inventory, net	\$	12,205	\$	9,479
Raw material inventory		10,833		8,349
Total inventories, net	\$	23,038	\$	17,828

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Note 6 - Debt Obligations

<i>(in thousands)</i>	As of	
	June 30, 2023	December 31, 2022
Term Loan due February 2027, related party	\$ 10,000	\$ —
Arq Loan due January 2036	9,787	—
Finance lease obligations	4,004	4,581
	23,791	4,581
Unamortized debt discounts	(943)	—
Unamortized debt issuance costs	(1,424)	—
	21,424	4,581
Less: Current maturities	(1,594)	(1,131)
Total long-term debt obligations	<u>\$ 19,830</u>	<u>\$ 3,450</u>

Term Loan

The Term Loan has a term of 48 months and bears interest at a rate equal to either (a) Adjusted Term SOFR (subject to a 1.00% floor and a cap of 2.00%) plus a margin of 9.00% paid in cash and 5.00% paid in kind or (b) Base Rate plus a margin of 8.00% paid in cash and 5.00% paid in kind, which interest on the Term Loan in each case shall be payable (or capitalized, in the case of in kind interest) quarterly in arrears.

The Company may prepay the Term Loan at any time subject to the following prepayment premium: (i) prior to the twelve month anniversary of the Closing Date, the Make-Whole Amount (as defined below), (ii) thereafter but prior to the thirty-six month anniversary of the Closing Date, 2.00% of the outstanding principal amount of the Term Loan being repaid or prepaid or (iii) thereafter until the maturity date, 1.00% of the outstanding principal amount of the Term Loan being repaid or prepaid. The "Make-Whole Amount," with respect to any repayment or prepayment, is (i) an amount equal to all required interest payable (except for currently accrued and unpaid interest) on the aggregate principal amount of the Term Loan subject to such prepayment or repayment from the date of such prepayment or repayment through but excluding the date that is the first anniversary of the Closing Date calculated using an interest rate equal to (x) Adjusted Term SOFR for an interest period of one month in effect on the third U.S. Government Securities Business Day prior to such prepayment or repayment plus (y) 14.00% per annum and assuming all interest was paid in cash, plus (ii) a prepayment premium of 2.00% on the aggregate principal amount of the Term Loan subject to such prepayment or repayment.

The Term Loan is secured by substantially all of the assets of the Company and its subsidiaries (including those acquired in the Acquisition, but excluding those pledged as collateral under the Arq Loan, as defined and described below), subject to customary exceptions. The Loan Agreement includes, among others, the following covenants: (1) beginning with the first fiscal quarter after March 31, 2023 and as of the end of each fiscal quarter thereafter, the Company must maintain a minimum unrestricted cash balance of \$5.0 million; (2) (x) as of December 31, 2023, for the fiscal year then ended, the Company must have a minimum annual revenue, on a consolidated basis, of \$70.0 million, (y) as of December 31, 2024, for the fiscal year then ended, the Company must have a minimum annual revenue, on a consolidated basis, of \$85.0 million and (z) for any fiscal year thereafter, the Company must have a minimum annual revenue, on a consolidated basis, of \$100.0 million; (3) (x) as of December 31, 2024, for the fiscal year then ended, the Company must have a minimum Consolidated EBITDA of \$3.0 million and (y) for any fiscal year thereafter, the Company must have a minimum Consolidated EBITDA of \$16.0 million; and (4) beginning after the fiscal quarter ending September 30, 2023, during an LTV Trigger Period, ADES must not exceed a loan to value (based on the consolidated total assets of the Company and its subsidiaries) ratio of 0.40:1.00.

The Company allocated the cash proceeds of the Term Loan to both the Term Loan and the Warrant based on their relative fair values. The amount allocated to the Warrant was recorded as a debt discount and is amortized to interest expense over the term of the Term Loan. The standalone fair value of the Term Loan was based on a comparison of borrowings and associated credit ratings consistent with those of the Company. As the Warrant is exercisable for \$0.01 per share, the fair value is deemed to be equal to the fair value of the underlying shares, and accordingly, the fair value of the Warrant was determined as the number of shares issuable from the exercise of the Warrant (based on 1.0% of post-transaction fully diluted share capital, as defined in the Purchase Agreement) multiplied by the closing share price of the Company's common stock on the Acquisition Date.

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Arq Loan

As consideration in the Arq Acquisition, the Company assumed a term loan (the "Arq Loan") held by certain Arq subsidiaries as set out in the Arq Loan (the "Arq Subsidiaries") with a financial institution (the "Bank") in the principal amount of \$10.0 million. The Company recorded the Arq Loan on the Acquisition Date at its estimated fair value of \$9.7 million, with the difference between the estimated fair value and the principal amount of \$0.3 million recorded as a debt discount. This debt discount is recognized as interest expense over the term of the Arq Loan.

The Arq Loan was originally entered into on January 27, 2021 and is comprised of two promissory notes (the "Notes"): (1) "Note A" in the principal amount of \$8.0 million, which is guaranteed by the U.S. Department of Agriculture; and (2) "Note B" in the principal amount of \$2.0 million. The Notes mature on January 27, 2036 and bear interest at 6.0% per annum through January 2026 and at the prime rate plus 2.75% thereafter. Beginning January 27, 2023 and for the balance of the term of the Arq Loan, the Arq Subsidiaries are required to make combined interest and principal payments monthly in the fixed amount of \$0.1 million. Interest is computed and payable on the outstanding principal as of the end of the prior month and the balance of the fixed monthly payment amount is applied to the outstanding principal. The Notes carry a prepayment penalty of 3.0% of the outstanding principal if paid prior to January 27, 2024, 2.0% of the outstanding principal if paid prior to January 27, 2025 and 1.0% of the outstanding principal if paid prior to January 27, 2026. Thereafter, the Arq Loan may be prepaid without penalty.

On June 2, 2023 (the "Amendment Date"), certain of the Subsidiaries, which include Corbin Project LLC, Arq Projects Holding Company LLC, Arq St. Rose LLC, Arq Corbin LLC and Arq Corbin Land LLC (collectively, the "Borrowers") and the Bank entered into a loan modification agreement (the "Arq Loan Modification Agreement") to the Arq Loan, as amended by that certain letter agreement by and among the Bank and Borrowers dated January 21, 2022, and as otherwise amended, modified and/or extended by the parties from time to time (collectively, the "Arq Loan Agreement"). As consideration for the Bank entering into the Arq Loan Modification Agreement, the Borrowers agreed to pay a fee of \$50,000 plus additional fees incurred by the Bank and were required to deposit an additional \$0.7 million into a deposit account (the "Interest Reserve Account" as defined in the Arq Loan Agreement), where the Interest Reserve Account is held as collateral by the Bank. The Borrowers may withdraw funds from the Interest Reserve Account beginning one year from the Amendment Date, subject to restrictions as stated in the Arq Loan Modification Agreement.

The Arq Loan Modification Agreement clarified and modified certain terms under the Arq Loan Agreement. The principal clarifications and modifications are as follows:

- The Borrowers are not entitled to any further disbursements of proceeds under those promissory notes described in the Arq Loan Modification Agreement;
- The Bank agreed to waive certain financial delivery requirements for fiscal years 2021 and 2022;
- The Bank agreed to waive certain required financial covenants required as of December 31, 2022 and certain required financial covenants as of December 31, 2023;
- The Borrowers are required to establish their operating bank accounts with the Bank no later than September 30, 2023; and
- The Bank is authorized to amend and/or amend and restate its then-current security instruments to include additional collateral represented by the Borrowers' acquisition of any equipment or other fixed and/or operating assets in which the Bank does not then hold a lien or security interest.

The Arq Loan is secured by substantially all assets of the Borrowers and includes among others, the following covenants with respect to the Borrowers, which are tested annually (Capitalized terms are defined in the Arq Loan Agreement): (a) Total Indebtedness to Net Worth greater than 4 to 1; (b) Balance Sheet Equity greater than or equal to 20% of the book value of all assets of the Borrowers; (c) (i) net income plus interest, taxes, depreciation and amortization divided by (ii) interest expense plus current maturities on long-term debt greater than or equal to 1.25 to 1.

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Note 7 - Leases

The Company's operating and finance lease right-of-use ("ROU") assets and liabilities as of June 30, 2023 and December 31, 2022 consisted of the following items (in thousands):

Leases	As of	
	June 30, 2023	December 31, 2022
Operating Leases		
Operating lease right-of-use assets, net of accumulated amortization ⁽¹⁾	\$ 11,292	\$ 7,734
Operating lease obligations, current	\$ 2,375	\$ 2,724
Long-term operating lease obligations	9,006	5,133
Total operating lease obligation	\$ 11,381	\$ 7,857
Finance Leases		
Finance lease right-of-use assets, net of accumulated amortization ⁽²⁾	\$ 2,120	\$ 2,565
Finance lease obligations, current	\$ 1,119	\$ 1,131
Long-term finance lease obligations	2,885	3,450
Total finance lease obligations	\$ 4,004	\$ 4,581

(1) Operating lease ROU assets are reported net of accumulated amortization of \$4.5 million and \$4.4 million as of June 30, 2023 and December 31, 2022, respectively.

(2) Finance lease ROU assets are reported net of accumulated amortization of \$2.4 million and \$2.0 million as of June 30, 2023 and December 31, 2022, respectively.

Operating leases

ROU assets under operating leases and operating lease liabilities are included in the "Other long-term assets" and "Other current liabilities" and "Other long-term liabilities" line items, respectively, in the Condensed Consolidated Balance Sheets as of June 30, 2023 and December 31, 2022.

Lease expense for operating leases for the three and six months ended June 30, 2023 was \$1.3 million and \$2.7 million, respectively, of which \$1.1 million and \$2.2 million, respectively, is included in the "Consumables - cost of revenue, exclusive of depreciation and amortization" line item, and \$0.2 million and \$0.5 million, respectively, is included in the "General and administrative" line item in the Condensed Consolidated Statements of Operations for those periods.

Lease expense for operating leases for the three and six months ended June 30, 2022 was \$1.0 million and \$2.0 million, respectively, of which \$0.9 million and \$1.8 million, respectively, is included in the "Consumables - cost of revenue, exclusive of depreciation and amortization" line item, and \$0.1 million and \$0.2 million, respectively, is included in the "General and administrative" line item in the Condensed Consolidated Statements of Operations for those periods.

Finance leases

ROU assets under finance leases are included in the "Property, plant and equipment" line item in the Condensed Consolidated Balance Sheets as of June 30, 2023 and December 31, 2022. Interest expense related to finance lease obligations and amortization of ROU assets under finance leases are included in the "Interest expense" and "Depreciation, amortization, depletion and accretion" line items, respectively, in the Condensed Consolidated Statements of Operations for the three and six months ended June 30, 2023 and 2022.

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Lease financial information as of and for the three and six months ended June 30, 2023 and 2022 is provided in the following table:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Finance lease cost:				
Amortization of right-of-use assets	\$ 223	\$ 230	\$ 446	\$ 371
Interest on lease liabilities	63	86	131	164
Operating lease cost	1,035	778	2,017	1,584
Short-term lease cost	242	216	651	459
Variable lease cost ⁽¹⁾	56	3	64	7
Total lease cost	\$ 1,619	\$ 1,313	\$ 3,309	\$ 2,585
Other Information:				
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash flows for finance leases			\$ 131	\$ 164
Operating cash flows for operating leases			\$ 1,483	\$ 1,419
Financing cash flows for finance leases			\$ 577	\$ 594
Right-of-use assets obtained in exchange for new finance lease liabilities			\$ —	\$ 1,641
Right-of-use assets obtained in exchange for new operating lease liabilities			\$ 1,881	\$ 3,418
Weighted-average remaining lease term - finance leases			2.3 years	3.2 years
Weighted-average remaining lease term - operating leases			7.7 years	4.3 years
Weighted-average discount rate - finance leases			5.9 %	5.9 %
Weighted-average discount rate - operating leases			11.0 %	5.9 %

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

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Note 8 - Commitments and Contingencies

Retention Agreements

As of December 31, 2022, the Company had an outstanding liability of \$1.4 million (the "Retention Liability"), which was included in the "Other current liabilities" line item in the Condensed Consolidated Balance Sheet, related to retention agreements (the "Retention Agreements") executed between the Company and its executive officers and certain other key employees in May 2021 and amended in May 2022 in order to maintain the Company's business operations while it pursued and executed on its strategic initiatives. The Retention Agreements were approved by the Compensation Committee of the Board of Directors and the Board of Directors (the "Board") in May 2021 and May 2022. In August 2022, the Company paid \$1.0 million pursuant to the payment terms of the Retention Agreements and the Retention Liability was paid in full in January 2023.

Surety Bonds and Restricted Cash

As the owner of the Five Forks Mine, the Company is required to post a surety bond with a regulatory commission. As of June 30, 2023 and December 31, 2022, the Company had posted a \$7.5 million surety bond related to performance requirements associated with the Five Forks Mine.

The Company leases land adjacent to the Corbin Facility and is required to post surety bonds with a regulatory commission for reclamation. As of June 30, 2023, the amount of these surety bonds was \$3.0 million.

The Company holds permits for an abandoned mine in West Virginia ("Mine 4") and is required to post a surety bond with a regulatory commission for reclamation. As of June 30, 2023, the amount of this surety bond was \$0.7 million.

As the owner of the Marshall Mine, the Company was required to post a surety bond with a regulatory commission. As of December 31, 2022, the Company posted a \$16.6 million surety bond that was released upon all of the Conditions for closing the MM Transaction being satisfied, which occurred on March 27, 2023.

As of June 30, 2023 and December 31, 2022, the Company posted cash collateral of \$8.6 million and \$10.0 million, respectively, as required by the Company's surety bond providers, which is reported as long-term restricted cash in the Condensed Consolidated Balance Sheets. As of June 30, 2023, the Company holds a deposit of \$0.4 million with a third party for collateral as required under a bonding arrangement for Mine 4. This deposit is included in "Other long-term assets, net" in the Condensed Consolidated Balance Sheet as of June 30, 2023.

Tinum Group

In addition to those obligations described in Note 10, the Company has certain limited obligations contingent upon future events in connection with the activities of Tinum 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 "Tinum Group Party Guaranties") related to certain losses it may suffer as a result of inaccuracies or breach of representations and covenants committed by Tinum Group. The Company also is a party to a contribution agreement with NexGen under which any party called upon to pay on a Tinum 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 Tinum Group Party Guaranties.

Legal Proceedings

The Company is from time to time subject to 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, 2023.

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Note 9 - Supplemental Financial Information

Supplemental Balance Sheet Information

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

<i>(in thousands)</i>	As of	
	June 30, 2023	December 31, 2022
Other long-term assets, net:		
Right of use assets, operating leases, net	\$ 11,292	\$ 7,734
Intangible assets, net	8,222	847
Spare parts, net	7,647	6,789
Upfront Customer Consideration	6,221	6,475
Mine development costs, net	6,629	5,478
Mine reclamation asset, net	1,591	1,641
Other	2,622	1,683
Total other long-term assets, net	\$ 44,224	\$ 30,647

Mine development costs include acquisition costs, the cost of other development work and mitigation costs related to the Five Forks Mine and are depleted over the estimated life of the related mine reserves. 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. There were no indicators of impairment as of June 30, 2023.

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 or are capitalized if applicable.

Mine reclamation asset, net represents an asset retirement obligation ("ARO") asset related to the Five Forks Mine and is depreciated over its estimated life.

As of June 30, 2023 and December 31, 2022, Other includes the Highview Investment in the amount of \$0.6 million and \$0.6 million, respectively, that is carried at cost, less impairment, plus or minus observable changes in price for identical or similar investments of the same issuer. Fair value measurements, if any, represent Level 2 measurements. 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, 2023 as there were no indicators of impairment or observable price changes for identical or similar investments.

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

<i>(in thousands)</i>	As of	
	June 30, 2023	December 31, 2022
Other current liabilities:		
Current portion of operating lease obligations	\$ 2,375	\$ 2,724
Income and other taxes payable	1,069	1,039
Current portion of mine reclamation liability	169	548
Other ⁽¹⁾	2,762	2,334
Total other current liabilities	\$ 6,375	\$ 6,645
Other long-term liabilities:		
Operating lease obligations, long-term	\$ 9,006	\$ 5,133
Mine reclamation liabilities	5,323	7,985
Other	806	733
Total other long-term liabilities	\$ 15,135	\$ 13,851

(1) Included in Other current liabilities is \$1.7 million related to the Repayment Agreement as defined in Note 10.

As of June 30, 2023 and December 31, 2022, the Mine reclamation liability related to the Five Forks Mine is included in Other long-term liabilities. As of December 31, 2022, the Mine reclamation liability related to Marshall Mine was included in Other current liabilities and Other long-term liabilities.

As part of the Arq Acquisition, the Company assumed asset retirement obligations related to two sites; a coal waste site adjacent to the Corbin Facility (the "Corbin ARO") and Mine 4 located in West Virginia (the "Mine 4 ARO"). The Company recorded these AROs at their estimated fair values and periodically adjusts them to reflect changes in the estimated present value resulting from the passage of time and revisions to the estimates of either the timing or amount of the reclamation costs. As of June 30, 2023, the Corbin ARO is included in Other long-term liabilities. As of June 30, 2023, the current portion of the Mine 4 ARO is included in Other current liabilities with the long-term portion included in Other long-term liabilities.

The Mine reclamation liabilities represent AROs and changes for the six months ended June 30, 2023 and year ended December 31, 2022 were as follows:

<i>(in thousands)</i>	As of	
	June 30, 2023	December 31, 2022
Asset retirement obligations, beginning of period	\$ 8,533	\$ 9,959
Asset retirement obligations assumed ⁽¹⁾	1,500	—
Accretion	303	611
Liabilities settled ⁽²⁾	(4,844)	(2,071)
Changes due to scope and timing of reclamation	—	34
Asset retirement obligations, end of period	5,492	8,533
Less current portion	169	548
Asset retirement obligations, long-term	\$ 5,323	\$ 7,985

(1) Represents the Corbin ARO and Mine 4 ARO in the amounts of \$0.5 million and \$1.0 million, respectively.

(2) Represents the removal of the Marshall Mine ARO as a result of the MM Transaction as further discussed in Note 3.

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Note 10 - Equity Method Investments

Tinum Group, LLC

As of June 30, 2023 and December 31, 2022, the Company's ownership interest in Tinuum Group was 42.5%. For the three and six months ended June 30, 2023 the Company recognized earnings from Tinuum Group of \$0.2 million and \$0.9 million, respectively, which was comprised solely of cash distributions received during these periods. For the three and six months ended June 30, 2022, the Company recognized earnings from Tinuum Group of \$2.1 million and \$3.1 million, respectively, which was comprised solely of cash distributions received during these periods.

In December 2022, the Company, certain of the other owners of Tinuum Group (collectively, the "Tinuum Group Owners") and Tinuum Group executed the Distribution and Repayment Agreement (the "Repayment Agreement"). Under the terms of the Repayment Agreement, the Tinuum Group Owners receive cash distributions (the "Distributions") equal to their percentage ownership and also are contractually liable for certain contingent liabilities of Tinuum Group (the "Tinuum Group Obligation") in amounts equal to their percentage ownership. In December 2022, the Company received its percentage share of the Distributions in the amount of \$2.0 million and became contractually liable for \$1.7 million of the Tinuum Group Obligation. As of June 30, 2023 and December 31, 2022, the Company's portion of the Tinuum Group Obligation is \$1.7 million and \$1.7 million, respectively, and is included in the "Other current liabilities" line item in the Condensed Consolidated Balance Sheets. In the event that the Tinuum Group Obligation is discharged in its entirety or settled for an amount that is less than the total Tinuum Group Obligation, the Company will recognize future equity earnings for the difference in its portion of the Tinuum Group Obligation and its pro rata share of the actual payment made by Tinuum Group, if any, for the Tinuum Group Obligation.

In December 2022, the Company and Tinuum Group entered into an agreement (the "Tinuum Group Royalty Agreement") whereby the Company pays Tinuum Group a royalty (the "Tinuum Group Royalty") on certain of the Company's sales of its M-Prove™ products after the expiration of the Section 45 Tax Credit Program (beginning January 1, 2022) to certain of the former refined coal facilities owned by Tinuum Group and operated by Tinuum Services (the "M-45 Facilities"). The Tinuum Group Royalty is calculated based on "Net Profit" (as defined in the Tinuum Royalty Agreement) on the Company's sales of M-Prove™ product to certain of the M-45 Facilities. The Tinuum Group Royalty Agreement is for an initial term of five years with automatic renewals of five years unless the Company and Tinuum Group agree to terminate it.

For the three and six months ended June 30, 2023, the Company recognized \$0.3 million and \$0.5 million, respectively, of Tinuum Group Royalties, which are included in the "Consumables cost of revenues, excluding depreciation and amortization" line item in the Consolidated Statement of Operations.

Tinum Services, LLC

As of June 30, 2023 and December 31, 2022, the Company had a 50% voting and economic interest in Tinuum Services. For the three and six months ended June 30, 2023, the Company recognized income from Tinuum Services of \$0.3 million and \$0.3 million, respectively. For the three and six months ended June 30, 2022, the Company recognized income from Tinuum Services of \$0.3 million and \$0.1 million, respectively.

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Cash Distributions

The following table details the components of the cash distributions from the Company's respective equity method investments included as a component of cash flows from operating activities and investing activities 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" as a component of cash flows from operations until such time as the carrying value in an equity method investee company is reduced to zero. Thereafter, such distributions are reported as "Distributions from equity method investees in excess of cumulative earnings" as a component of cash flows from investing activities.

<i>(in thousands)</i>	Six Months Ended June 30,	
	2023	2022
Distributions from equity method investees, return on investment		
Tinum Services	\$ —	\$ 2,297
Tinum Group	—	—
	\$ —	\$ 2,297
Distributions from equity method investees in excess of investment basis		
Tinum Group	\$ 850	\$ 3,137
Tinum Services	250	179
	\$ 1,100	\$ 3,316

Note 11 - Stockholders' Equity

Arq Acquisition and PIPE Investment

On February 1, 2023, the Company issued 3,814,864 and 3,842,315 shares of its Common Stock pursuant to the Arq Acquisition and the PIPE Investment, respectively. In addition, the Company issued 5,294,462 Preferred Shares pursuant to the Arq Acquisition.

On March 31, 2023, and pursuant to the Certificate of Designations, the Company declared a dividend of 68,464 shares of Series A Preferred Stock with respect to accrued dividends on the Series A Preferred Stock for the first quarter of 2023 (the "PIK Dividend"). The PIK Dividend was recorded at the estimated fair value of \$0.2 million as of March 31, 2023 and was paid on April 21, 2023.

As discussed in Note 2, on the Conversion Date, pursuant to stockholder approval, all shares of Series A Preferred Stock were converted into shares of Common Stock.

Term Loan

As consideration for the Term Loan, the Company issued 325,857 Warrant Shares, which were deemed to be equity securities. The Warrant Shares were recorded at their estimated fair value of \$0.8 million to Additional paid in capital with a corresponding amount recorded as a debt discount on the Term Loan.

Stock Repurchase Program

As of June 30, 2023, the Company had \$7.0 million remaining under a stock repurchase program, which will remain in effect until all amounts are utilized or is otherwise modified by the Board.

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 tax credits 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.

An entity that experiences an ownership change generally will be subject to an annual limitation on its pre-ownership change tax loss and credit carryforwards equal to the equity value of the entity immediately before the ownership change, multiplied by the long-term, tax-exempt rate posted monthly by the Internal Revenue Service (subject to certain adjustments). The annual limitation would be increased each year to the extent that there is an unused limitation in a prior year.

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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"), which is 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 11, 2023, the Board approved the Sixth Amendment to the TAPP (the "Sixth Amendment"), which amends the TAPP, as previously amended by the First, Second, Third, Fourth and Fifth Amendments that were approved the Board on April 6, 2018, April 5, 2019, April 9, 2020, April 9, 2021 and March 15, 2022, respectively. The Sixth 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. Pursuant to the Sixth Amendment, the Final Expiration Date shall be the close of business on the earlier of (i) December 31, 2024 or (ii) December 31, 2023 if stockholder approval of the Sixth Amendment has not been obtained prior to such date. At the Company's 2023 Annual Meeting of Stockholders, the Company's stockholders approved the Sixth Amendment, thus the Final Expiration Date will be the close of business on December 31, 2024.

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, RSAs, PSUs, restricted stock units and stock options. Stock-based compensation expense related to manufacturing employees and administrative employees is included within the "Cost of revenue" 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, 2023 and 2022 was as follows:

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
RSA expense	\$ 416	\$ 393	\$ 904	\$ 820
PSU expense	129	91	204	128
Total stock-based compensation expense	<u>\$ 545</u>	<u>\$ 484</u>	<u>\$ 1,108</u>	<u>\$ 948</u>

The amount of unrecognized compensation cost as of June 30, 2023, and the expected weighted-average period over which the cost will be recognized is as follows:

<i>(in thousands, expect years)</i>	As of June 30, 2023	
	Unrecognized Compensation Cost	Expected Weighted-Average Period of Recognition (in years)
RSA expense	\$ 2,418	2.24
PSU expense	930	2.24
Total unrecognized stock-based compensation expense	<u>\$ 3,348</u>	<u>2.24</u>

Restricted Stock

Restricted stock is typically granted with vesting terms of three years. The fair value of RSAs 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 RSAs is generally recognized on a straight-line basis over the entire vesting period.

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A summary of RSA activity under the Company's various stock compensation plans for the six months ended June 30, 2023 is presented below:

	<u>Restricted Stock</u>	<u>Weighted-Average Grant Date Fair Value</u>
Non-vested at January 1, 2023	652,962	\$ 5.58
Granted	498,541	\$ 1.97
Vested	(276,767)	\$ 5.62
Forfeited	(31,729)	\$ 4.63
Non-vested at June 30, 2023	<u>843,007</u>	<u>\$ 3.46</u>

Performance Share Units

Compensation expense is recognized for PSUs 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, 2023 is presented below:

	<u>Units</u>	<u>Weighted-Average Grant Date Fair Value</u>	<u>Aggregate Intrinsic Value (in thousands)</u>	<u>Weighted-Average Remaining Contractual Term (in years)</u>
PSUs outstanding, January 1, 2023	148,591	\$ 7.85		
Granted	231,242	2.48		
Vested / Settled ⁽¹⁾	(41,855)	6.17		
Forfeited / Canceled	—	—		
PSUs outstanding, June 30, 2023	<u>337,978</u>	<u>\$ 4.38</u>	<u>\$ 629</u>	<u>2.24</u>

(1) The number of units shown in the table above are based on target performance. The final number of shares of common stock issued may vary depending on the achievement of market conditions established within the awards, which could result in the actual number of shares issued ranging from zero to a maximum of two times the number of units shown in the above table. For the three and six months ended June 30, 2023, no shares of common stock were issued upon vesting of PSUs.

Note 13 - Income Taxes

For the three and six months ended June 30, 2023 and 2022, the Company's income tax expense and effective tax rates were:

<i>(in thousands, except for rate)</i>	<u>Three Months Ended June 30,</u>		<u>Six Months Ended June 30,</u>	
	<u>2023</u>	<u>2022</u>	<u>2023</u>	<u>2022</u>
Income tax benefit	\$ —	\$ —	\$ (33)	\$ —
Effective tax rate	—%	—%	—%	—%

The Company incurred pretax loss for the six months ended June 30, 2023 and expects to incur pretax loss for the year ending December 31, 2023. As a result, the effective rate for the three and six months ended June 30, 2023 was zero as the resultant tax benefit was offset by a valuation allowance recorded as of June 30, 2023.

The Company assesses a 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 deferred tax assets, 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 14 - Subsequent Events

Unless disclosed elsewhere in the notes to the Condensed Consolidated Financial Statements, the following are the significant matters that occurred subsequent to June 30, 2023.

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On July 14, 2023, the Board appointed Mr. Robert Rasmus to the positions of President and Chief Executive Officer effective July 17, 2023 succeeding Mr. Greg Marken, who will remain an employee of the Company through August 28, 2023. Also on this date, the Board increased the size of the Board from seven to eight directors and appointed Mr. Rasmus to fill the vacancy as a member of the Board effective immediately.

On July 17, 2023, the Company entered into a Subscription Agreement (the "Subscription Agreement") with Mr. Rasmus and entities controlled by Mr. Rasmus, in connection with his appointment as the Company's President and Chief Executive Officer. Pursuant to the Subscription Agreement, Mr. Rasmus subscribed for and agreed to purchase 950,000 shares of the Company's common stock, par value \$0.001 per share, from the Company for an aggregate purchase price of \$1.8 million (at a price per share of approximately \$1.90). The purchase of these shares of Common Stock is expected to close on or prior to the 30th day following the date of the Subscription Agreement.

Under a separation agreement executed between the Company and Mr. Marken, Mr. Marken will receive the following payments and benefits in connection with his separation, which was determined to be a termination without cause: (i) the severance payments and benefits set forth in the terms of his employment agreement upon a termination without "cause," (ii) accelerated vesting of 49,715 shares of restricted stock, (iii) continued eligibility for possible vesting of a pro rata target number of 25,941 performance share units ("PSUs") granted in 2021, subject to achievement of applicable performance measures, (iv) continued eligibility for possible vesting of a pro rata target number of 15,988 PSUs granted in 2022, subject to achievement of applicable performance measures, and (v) continued eligibility for possible vesting of a pro rata target number of 19,834 PSUs granted in 2023, subject to achievement of applicable performance measures. Receipt of such payments and benefits is subject to Mr. Marken's execution and non-revocation of a separation agreement, which includes a customary release of claims. The Company expects to record a liability and corresponding charge in the amount of \$0.8 million related to (i) above.

In addition, the Company and Mr. Marken intend to enter into an advisor services agreement effective August 28, 2023 through September 27, 2023, pursuant to which Mr. Marken will provide up to 20 hours of consulting services to the Company and certain of its joint venture partners, as requested by any officer of the Company. The advisor services agreement provides for a retainer of \$12,000.

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 ("Item 1") of this Quarterly Report and with the audited consolidated financial statements and the related notes of ADES included in the 2022 Form 10-K.

The results of operations discussed in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" are those of ADES and its consolidated subsidiaries, collectively, the "Company," "we," "our" or "us."

Overview

We are an environmental technology company and sell consumable products that utilize activated carbon ("AC") and chemical-based technologies to a broad range of customers, including coal-fired utilities, industrials, water treatment plants, and other diverse markets served by one of our major customers. Our primary products are comprised of AC, which is produced from a variety of carbonaceous raw materials. Our AC products include both powdered activated carbon ("PAC") and granular activated carbon ("GAC"). Our proprietary technologies and associated product offerings provide purification solutions to enable our customers to reduce certain contaminants and pollutants to meet the challenges of existing and potential future regulations. Additionally, we own an associated lignite mine which supplies the primary raw material for the manufacturing of our current products.

Acquisition

On February 1, 2023 (the "Acquisition Date"), we completed the Arq Acquisition in exchange for the Purchase Consideration of \$31.2 million, which consisted of (i) 3,814,864 shares of the Company's common stock, par value \$0.001 per share (the "Common Stock") and (ii) 5,294,462 shares of the Company's Series A Convertible Preferred Stock, par value \$0.001 per share (the "Series A Preferred Stock").

On June 13, 2023 (the "Conversion Date"), the Company's stockholders approved the conversion of all of the outstanding shares of Series A Preferred Stock and the corresponding issuance of 5,362,926 shares of Common Stock.

Loan Agreement

On February 1, 2023, we and CFG entered into the Term Loan in the amount of \$10.0 million, less original issue discount of \$0.2 million. The Term Loan has a term of 48 months and bears interest at a rate equal to either (a) Adjusted Term SOFR (subject to a 1.00% floor and a cap of 2.00%) plus a margin of 9.00% paid in cash and 5.00% paid in kind or (b) Base Rate plus a margin of 8.00% paid in cash and 5.00% paid in kind, which interest on the Term Loan in each case is payable (or capitalized, in the case of in kind interest) quarterly in arrears. The Term Loan is secured by substantially all of the assets of ADES and its subsidiaries (including those acquired in the Acquisition, but excluding those pledged as collateral under the Arq Loan, as defined and described in Note 6 "Debt Obligations" to the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report, subject to customary exceptions. We incurred issuance costs of \$1.3 million associated with the Loan Agreement.

The Loan Agreement also provided for the issuance of the Warrant to CFG to purchase 325,457 shares of Common Stock, which represents 1% of the post-Arq Acquisition and PIPE Investment (as defined below) fully diluted share capital (as defined in the Loan Agreement), at an exercise price of \$0.01 per share. The Warrant has a term of 7 years and contains a cashless exercise provision.

Equity Financing

Also on February 1, 2023, we and the Subscribers, which included existing shareholders of Arq Ltd., entered into the PIPE Investment for the purchase of 3,842,315 shares of Common Stock for an aggregate purchase price of \$15.4 million and at a price per share of \$4.00.

Drivers of Demand and Key Factors Affecting Profitability

Drivers of demand and key factors affecting our profitability are sales of our consumables-based solutions for coal-fired power generation, industrials, municipal water customers and other diverse markets served by one of our major customers. Our operating results are influenced by: (1) changes in our manufacturing production and sales volumes; (2) changes in average selling price and product mix; (3) changes in coal-fired dispatch and electricity power generation sources and (4) changes in demand for contaminant removal within water treatment facilities.

For the three and six months ended June 30, 2023, we experienced a decrease in demand for our product from certain coal-fired dispatch and electricity power generation customers. This was primarily due to lower than anticipated natural gas prices, resulting in several large utilities certain customers opting to use natural gas versus coal as a primary source for power generation, and mild temperatures during the spring and early summer season, resulting in lower demand for power generation compared to 2022. We expect that natural gas prices will remain at current lows through 2023, which, we expect, will negatively impact sales of our products even with higher than average summer temperatures.

Marshall Mine

On March 27, 2023, we closed the sale of Marshall Mine, LLC and we remitted a cash payment to the Buyer in the amount of \$2.2 million in connection with the sale. As of March 27, 2023, Marshall Mine, LLC had outstanding liabilities of approximately \$4.9 million that were discharged upon the closing, and as a result, we recognized a gain of approximately \$2.7 million for the six months ended June 30, 2023.

Results of Operations

For the three and six months ended June 30, 2023, we recognized net loss of \$5.9 million and \$13.4 million, compared to net loss of \$0.3 million and \$3.4 million for the three and six months ended June 30, 2022. The most significant factors impacting results period over period were increased expenses related to the Arq Acquisition as well as the decrease in demand for our AC and chemical products related to power generation as a result of prices of alternative energy sources.

The following sections provide additional information regarding these comparable 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 current year period to prior year period comparisons of financial results may not be indicative of financial results to be achieved in future periods.

Comparison of the Three Months Ended June 30, 2023 and 2022

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, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Revenues:				
Consumables	\$ 20,445	\$ 24,739	\$ (4,294)	(17)%
Total revenues	\$ 20,445	\$ 24,739	\$ (4,294)	(17)%
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	\$ 15,336	\$ 19,910	\$ (4,574)	(23)%

Consumables and consumables cost of revenue

For the three months ended June 30, 2023, consumables revenues decreased from the comparable quarter in 2022 primarily driven by a decrease in volumes sold, which comprised \$6.4 million of the total change. Product volumes were lower among power generation customers primarily due to low natural gas prices compared to the same quarter in 2022, which contributed to decreased utilization of coal-fired generation and decreased demand for our products. The average natural gas spot prices (\$/MMBtu) for the three months ended June 30, 2023 and 2022 were \$2.16 and \$7.47, respectively. Total consumables revenues also decreased for the three months ended June 30, 2023 by approximately \$0.1 million from the comparable quarter due to unfavorable product mix. Offsetting these decreases to Consumables revenues were overall higher pricing of our products by approximately \$2.2 million from the comparable quarter in 2022.

Consumables gross margin, exclusive of depreciation and amortization, increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022. Driving the increase in gross margin was a decrease in the price of our feedstock and additives, primarily as a result of decreased production volumes for the three months ended June 30, 2023. However, given the lower production volumes, fixed costs, as a percentage of total costs, increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022.

For 2023, and based on current market estimates, we believe there will be a slight increase in Consumables revenue in the second half of 2023 compared to the first half of 2023, driven by changes to customer and product mix, and overall improvements in pricing. However, we continue to expect to see decreases in volumes compared to 2022 due to prices of alternative energy sources impacting the demand for our AC and chemical products related to power generation. There is risk to our volumes outlook driven by inflationary pressures that may increase our overall operating costs for our manufacturing operations

Consumables revenues continues to be 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 and renewables.

Other Operating Expenses

A summary of the components of our operating expenses for the three months ended June 30, 2023 and 2022, exclusive of cost of revenue items (presented above), is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Operating expenses:				
Payroll and benefits	\$ 3,555	\$ 2,519	\$ 1,036	41 %
Legal and professional fees	1,868	1,555	313	20 %
General and administrative	3,345	1,869	1,476	79 %
Depreciation, amortization, depletion and accretion	2,428	1,588	840	53 %
Other	—	34	(34)	(100)%
	<u>\$ 11,196</u>	<u>\$ 7,565</u>	<u>\$ 3,631</u>	<u>48 %</u>

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, 2023 compared to the corresponding quarter in 2022 primarily due to the addition of Arq employees as a result of the Arq Acquisition.

Legal and professional fees

Legal and professional fees increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022 primarily from increases in legal costs incurred related to the Arq Acquisition and legal costs incurred for intellectual property.

General and administrative

General and administrative expenses increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022 as a result of \$0.9 million expenses incurred by Arq, which included \$0.4 million for rent and occupancy expense from additional leased space. Additional increases of approximately \$0.6 million quarter over quarter related to increases in travel, insurance, recruiting of a new Board director and Board compensation, as three new directors were added to the Board in connection with the Arq Acquisition.

Depreciation, amortization, depletion and accretion

Depreciation and amortization expense increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022 primarily due to depreciation and amortization of approximately \$0.9 million from the addition of long-lived assets and intangible assets acquired as part of the Arq Acquisition.

Other Income (Expense), net

A summary of the components of other income (expense), net for the three months ended June 30, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Three Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Other income (expense):				
Earnings from equity method investments	\$ 462	\$ 2,389	\$ (1,927)	(81)%
Interest expense	(834)	(90)	(744)	827 %
Other	603	111	492	443 %
Total other income	\$ 231	\$ 2,410	\$ (2,179)	(90)%

Earnings from equity method investments

Earnings from equity method investments for the three months ended June 30, 2023 and 2022 represented cash distributions from Tinum Group and Tinum Services. The decrease was primarily due to Tinum Group and Tinum Services continuing to wind down their services into 2023.

Additional information related to equity method investments is included in Note 10 to the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report.

Interest expense

Interest expense increased for the three months ended June 30, 2023 compared to the corresponding quarter in 2022 due to interest expense of \$0.5 million related to the Term Loan, which was entered into on February 1, 2023 in connection with the Arq Acquisition. Interest expense of \$0.2 million related to the Arq Loan, which we assumed as result of the Arq Acquisition, also contributed to the increase.

Other

During the three months ended June 30, 2023, we earned \$0.5 million of interest income from cash on hand.

Income tax expense

For three months ended June 30, 2023, we had pretax loss of \$5.9 million and recorded no income tax expense or benefit. We recorded no income tax benefit for this quarter due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ending December 31, 2023. For the three months ended June 30, 2022, we had pretax loss of \$0.3 million and recorded no income tax benefit due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ended December 31, 2022.

Comparison of the Six Months Ended June 30, 2023 and 2022

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, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Six Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Revenues:				
Consumables	\$ 41,250	\$ 51,141	\$ (9,891)	(19)%
Total revenues	\$ 41,250	\$ 51,141	\$ (9,891)	(19)%
Operating expenses:				
Consumables cost of revenue, exclusive of depreciation and amortization	\$ 32,511	\$ 41,417	\$ (8,906)	(22)%

Consumables and consumables cost of revenue

For the six months ended June 30, 2023, consumables revenues decreased from the comparable period in 2022 primarily driven by a decrease in volumes sold, which comprised \$12.9 million of the total change. Product volumes decreased among power generation customers primarily due to low natural gas prices compared to the same period in 2022, which contributed to decreased utilization of coal-fired generation and decreased demand for our products. Total consumables revenues also decreased for the six months ended June 30, 2023 by approximately \$1.0 million from the comparable period in 2022 due to unfavorable product mix. Offsetting these decreases to Consumables revenues were overall higher pricing of our products by approximately \$4.0 million from the comparable period in 2022.

Consumables gross margin, exclusive of depreciation and amortization, decreased for the six months ended June 30, 2023 compared to the corresponding period in 2022. For the six months ended June 30, 2023, our consumables gross margin was negatively impacted by a decrease in volumes sold. Offsetting these negative impacts were lower prices for our feedstock and an increase in the prices of our products, most of which we had increased as of the beginning of April 2022.

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, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Six Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Operating expenses:				
Payroll and benefits	\$ 8,254	\$ 5,145	\$ 3,109	60 %
Legal and professional fees	6,406	3,727	2,679	72 %
General and administrative	6,123	3,795	2,328	61 %
Depreciation, amortization, depletion and accretion	4,565	3,094	1,471	48 %
Gain on sale of Marshall Mine, LLC	(2,695)	—	(2,695)	*
Other	—	34	(34)	(100)%
	<u>\$ 22,653</u>	<u>\$ 15,795</u>	<u>\$ 6,858</u>	43 %

* Calculation not meaningful

Payroll and benefits

Payroll and benefits expenses increased for the six months ended June 30, 2023 compared to the same period in 2022 primarily due to the addition of Arq employees, which increased expenses by \$3.2 million for the period, of which \$1.1 million related to severance expense of former executives of Arq. Further, payroll and benefits expenses related to non-Arq employees for the six months ended June 30, 2023 increased by \$0.7 million compared to the corresponding period in 2022. These increases were offset by a decrease in bonuses related to retention agreements with our executive officers and certain other key employees of \$0.7 million, as these bonuses were paid in full in January 2023.

Legal and professional fees

Legal and professional fees increased for the six months ended June 30, 2023 compared to the corresponding period in 2022 primarily as a result of an increase in costs incurred related to the Arq Acquisition, and were comprised mostly of legal and consulting fees. For the six months ended June 30, 2023, we incurred \$2.4 million of legal and professional fees related to non-recurring transactions costs associated with the Arq Acquisition.

General and administrative

General and administrative expenses increased for the six months ended June 30, 2023 compared to the corresponding period in 2022 as a result of \$1.5 million of expenses incurred by Arq, which included \$0.7 million from rent and occupancy expense from additional leased space. Additional increases of approximately \$0.8 million period over period related to increases in insurance, travel, recruiting of a new Board director and Board compensation, as three new directors were added to the Board in connection with the Arq Acquisition.

Depreciation, amortization, depletion and accretion

Depreciation and amortization expense increased for the six months ended June 30, 2023 compared to the corresponding period in 2022 primarily due to depreciation and amortization of approximately \$1.5 million from the addition of long-lived assets and intangible assets acquired in the Arq Acquisition.

Gain on sale of Marshall Mine, LLC

As discussed above, for the six months ended June 30, 2023, we recognized a gain of \$2.7 million on the sale of Marshall Mine, LLC.

Other Income (Expense), net

A summary of the components of our other income (expense), net for the six months ended June 30, 2023 and 2022 is as follows:

<i>(in thousands, except percentages)</i>	Six Months Ended June 30,		Change	
	2023	2022	(\$)	(%)
Other income (expense):				
Earnings from equity method investments	\$ 1,100	\$ 3,222	\$ (2,122)	(66)%
Interest expense	(1,368)	(176)	(1,192)	677 %
Other	785	(334)	1,119	(335)%
Total other income	\$ 517	\$ 2,712	\$ (2,195)	(81)%

Earnings from equity method investments

Earnings from equity method investments for the six months ended June 30, 2023 and 2022 represented cash distributions received from Tinuum Group and Tinuum Services. The decrease was primarily due to Tinuum Group and Tinuum Services continuing to wind down their services into 2023.

Additional information related to equity method investments is included in Note 10 to the Condensed Consolidated Financial Statements included in Item 1 of this Quarterly Report.

Interest expense

Interest expense increased for the six months ended June 30, 2023 compared to the corresponding period in 2022 due to interest expense of \$0.9 million related to the Term Loan, which was entered into on February 1, 2023 in connection with the Arq Acquisition. Interest expense of \$0.3 million related to the Arq Loan, which we assumed as result of the Arq Acquisition, also contributed to the increase.

Other

During the six months ended June 30, 2023, we earned \$0.8 million in interest income earned from cash on hand. For the six months ended June 30, 2022, Other is primarily comprised of a loss of \$0.5 million recognized on the early settlement of an amount owed by Norit for reclamation of the Marshall Mine as a result of Norit's acquisition by a third party, triggering a change of control provision in our supply agreement with Norit that required payment to the Company.

Income tax expense

For the six months ended June 30, 2023, we had pretax loss of \$13.4 million and recorded income tax benefit related to out-of-period state income tax refunds received during the period. We recorded no additional income tax benefit for the six months ended June 30, 2023 due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ending December 31, 2023. For the six months ended June 30, 2022, we had pretax loss of \$3.4 million and recorded no income tax benefit due to the recording of a full valuation allowance based on our forecast of pretax loss for the year ended December 31, 2022.

Non-GAAP Financial Measures

To supplement our financial information presented in accordance with U.S. GAAP (or "GAAP"), we provide non-GAAP measures of certain financial performance. These non-GAAP measures include EBITDA (EBITDA Loss) and Adjusted EBITDA (Adjusted EBITDA Loss). We have included these non-GAAP measures because management believes that they help to facilitate period to period comparisons of our operating results and provide useful information to both management and users of the financial statements by excluding certain expenses, gains and losses which may not be indicative of core operating results and business outlook. Management uses these non-GAAP measures in evaluating the performance of our business.

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 EBITDA (EBITDA Loss) 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, accretion, amortization of upfront customer consideration ("Upfront Customer Consideration"), interest expense, net and income taxes. We define Adjusted EBITDA (Adjusted EBITDA Loss) as EBITDA (EBITDA Loss), reduced by the non-cash impact of equity earnings from equity method investments and gain on sale of Marshall Mine, LLC, increased by cash distributions from equity method investments, loss on early settlement of a long-term receivable and loss on change in estimate, asset retirement obligation. Because Consolidated Adjusted EBITDA omits certain non-cash items, we believe that the measure is less susceptible to variances that affect our operating performance.

When used in conjunction with GAAP financial measures, we believe these non-GAAP measures are supplemental measures of operating performance which explain our operating performance for our period-to-period comparisons and against our competitors' performance. Generally, we believe these non-GAAP measures are less susceptible to variances that affect our operating performance results.

We expect the adjustments to Consolidated EBITDA and Consolidated Adjusted EBITDA in future periods will be generally 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 EBITDA and Adjusted EBITDA

<i>(in thousands)</i>	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net loss ⁽¹⁾	\$ (5,856)	\$ (326)	\$ (13,364)	\$ (3,359)
Depreciation, amortization, depletion and accretion	2,428	1,588	4,565	3,094
Amortization of Upfront Customer Consideration	127	127	254	254
Interest expense, net	308	54	598	118
Income tax benefit	—	—	(33)	—
(EBITDA loss) EBITDA	(2,993)	1,443	(7,980)	107
Cash distributions from equity method investees	462	3,100	1,100	5,613
Equity earnings	(462)	(2,389)	(1,100)	(3,222)
Gain on sale of Marshall Mine, LLC	—	—	(2,695)	—
Loss on early settlement of long-term receivable	—	—	—	535
Loss on change in estimate, asset retirement obligation	—	34	—	34
(Adjusted EBITDA loss) Adjusted EBITDA	\$ (2,993)	\$ 2,188	\$ (10,675)	\$ 3,067

(1) Included in Net loss for the three and six months ended June 30, 2023 is \$0.6 million and \$4.9 million, respectively, of transaction and integration costs incurred related to the Arq Acquisition. Included in Net Loss for the three and six months ended June 30, 2022 is \$0.4 million and \$1.2 million, respectively, of transaction and integration costs incurred related to the Arq Acquisition. Additionally, for the six months ended June 30, 2023, Net loss included \$1.7 million of Arq payroll and benefit costs.

Liquidity and Capital Resources

Current Resources and Factors Affecting Our Liquidity

As of June 30, 2023, our principal sources of liquidity included:

- cash on hand, excluding restricted cash of \$8.8 million; and
- our operations.

As of June 30, 2023, our principal uses of liquidity included:

- our business operating expenses;
- capital and spare parts expenditures;
- payments on our lease obligations;
- payments on our debt obligations; and
- payments for reclamation associated with the Five Forks Mine.

Cash Flows

Six Months Ended June 30, 2023 vs. Six Months Ended June 30, 2022

Cash and restricted cash decreased from \$76.4 million as of December 31, 2022 to \$67.6 million as of June 30, 2023. The following table summarizes our cash flows for the six months ended June 30, 2023 and 2022, respectively:

(in thousands)	Six Months Ended June 30,		Change
	2023	2022	
Cash and restricted cash (used in) provided by:			
Operating activities	\$ (21,159)	\$ 1,758	\$ (22,917)
Investing activities	(10,482)	1,305	(11,787)
Financing activities	22,792	(1,024)	23,816
Net change in cash and restricted cash	\$ (8,849)	\$ 2,039	\$ (10,888)

Cash flow from operating activities

Cash flows used in operating activities for the six months ended June 30, 2023 increased by \$22.9 million compared to the six months ended June 30, 2022. The net increase was primarily attributable to net loss of \$13.4 million recognized for the six months ended June 30, 2023 compared to net loss of \$3.4 million recognized for the six months ended June 30, 2022; the add-back of a non-cash gain of \$2.7 million recognized from the sale of Marshall Mine, LLC for the six months ended June 30, 2023; a decrease in accounts payable and accrued expenses of \$7.6 million, primarily from payments of Arq assumed liabilities comprised of accrued employee-related compensation and accrued transaction costs associated with the Arq Acquisition; payment of the balance of the Retention Bonuses; an increase in Other long-term assets, net of \$5.8 million, primarily from a payment received from settlement on a long-term receivable in 2022; and a decrease in Distributions from equity method investees, return on investment of \$2.3 million. Offsetting the net increase in cash flows used in operating activities for the six months ended June 30, 2023 compared to the six months ended June 30, 2022 was a decrease in net working capital, excluding accounts payable and accrued expenses, of \$2.2 million, a decrease in Earnings from equity method investments of \$2.1 million and an increase in Depreciation, amortization, depletion and accretion of \$1.5 million due to acquiring fixed assets associated with the Arq Acquisition.

Cash flow from investing activities

Cash flows used in investing activities increased for the six months ended June 30, 2023 compared to the six months ended June 30, 2022 by \$11.8 million primarily as a result of an increase in property, plant and equipment additions of \$7.5 million, an increase in mine development costs of \$0.9 million, a decrease in distributions from equity earnings in excess of cumulative earnings of \$2.2 million, a cash payment of \$2.2 million made in March 2023 required in the sale of Marshall Mine, LLC and a decrease in cash received from the sale of property and equipment of \$1.2 million. Offsetting the net increase in cash flows used in investing activities was \$2.2 million of cash acquired in the Arq Acquisition.

Cash flow from financing activities

Cash flows provided by financing activities for the six months ended June 30, 2023 compared to the six months ended June 30, 2022 increased by \$23.8 million primarily due to the net borrowings, net of debt issuance costs paid, of \$8.5 million on the Term Loan and net proceeds from the PIPE Investment of \$15.2 million.

Material Cash Requirements

With the Arq Acquisition, we assumed liabilities, including the Arq Loan, that will increase our cash requirements for the next 12 months and beyond. In addition, our success with the Arq acquisition will require significant capital expenditures as quantified below. With the execution of the Term Loan in February 2023, we are required to make quarterly interest payments beginning in March 2023 through February 2027, and a balloon payment of principal and PIK interest totaling approximately \$12.4 million on the expiration date of the Term Loan. We expect that our cash on hand as of June 30, 2023 will provide sufficient liquidity to fund our required contractual obligations due and operating loss incurred for the next 12 months.

Capital Expenditures

For 2023, we expect to incur between \$40.0 million and \$45.0 million in capital expenditures, including:

- Between \$13.0 million and \$15.0 million is forecast for capital improvements at the Red River Plant related to scheduled maintenance improvements and to complete current capital projects; and
- Between \$27.0 million and \$30.0 million is forecast for growth capital for the modifications of the Red River Plant and Corbin Plant in order to incorporate Arq Powder as feedstock.

We expect to fund all capital expenditures for 2023 from cash on hand.

Surety Bonds and Mine Obligations

As of June 30, 2023, we had outstanding surety bonds with regulatory commissions totaling \$7.5 million related to reclamation of the Five Forks Mine. As of June 30, 2023, and as required by our surety bond provider, we also held restricted cash of \$7.7 million pledged as collateral for such surety bonds related to the Five Forks Mine and other surety obligations.

As June 30, 2023, we had outstanding surety bonds with a regulatory commission totaling \$3.0 million for reclamation obligations of the land adjacent to the Corbin Facility.

We expect that the obligations secured by these surety bonds associated with the Five Forks Mine and the Corbin Facility will be performed in the ordinary course of business and in accordance with the applicable contractual terms. To the extent that the obligations are performed, the related surety bonds should be released and collateral requirements reduced. However, in the event any surety bond is called, our indemnity obligations could require us to reimburse the surety bond provider. We intend to fund our mine reclamation costs associated with the Five Forks Mine and the Corbin Facility from cash on hand.

Critical Accounting Policies and Estimates

Our critical 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" of Part II in the 2022 Form 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 information regarding recently issued accounting standards applicable to us.

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, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (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 anticipated effects from an increase in pricing of our AC products;
- (b) the anticipated effects from an increase in costs of our AC products and related cost increases in supply and logistics;
- (c) expected supply and demand for our AC products and services;
- (d) increasing competition in the AC market;
- (e) the effects of the Arq Acquisition;
- (f) the ability to successfully integrate Arq's business;
- (g) the ability to develop and utilize Arq's products and technology;

- (h) the ability to make Arq's products commercially viable;
- (i) the expected future demand of Arq's products;
- (j) future level of research and development activities;
- (k) future plant capacity expansions and site development projects;
- (l) the effectiveness of our technologies and the benefits they provide;
- (m) probability of any loss occurring with respect to certain guarantees made by Tinum Group;
- (n) the timing of awards of, and work and related testing under, our contracts and agreements and their value;
- (o) the timing and amounts of or changes in future revenues, 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;
- (p) the amount of future capital expenditures needed for our APT business and Arq to fund our business plan;
- (q) awards of patents designed to protect our proprietary technologies both in the U.S. and other countries;
- (r) the adoption and scope of regulations to control certain chemicals in drinking water and other environmental concerns;
- (s) the impact of adverse global macroeconomic conditions, including rising interest rates, recession fears and inflationary pressures, and geopolitical events or conflicts;
- (t) opportunities to effectively provide solutions to U.S. coal-related businesses to comply with regulations, improve efficiency, lower costs and maintain reliability;
- (u) the impact of prices of competing power generation sources such as natural gas and renewable energy on demand for our products; and
- (v) bank failures or other events affecting financial institutions.

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 that benefit our business; changes in laws and regulations, accounting rules, prices, economic conditions and market demand; impact of competition; availability, cost of and demand for alternative energy sources and other technologies; technical, start up and operational difficulties; our inability to commercialize our APT technologies on favorable terms; our inability to ramp up our operations to effectively address recent and expected growth in our business; loss of key personnel; availability of materials and equipment for our business; intellectual property infringement claims from third parties; pending litigation; as well as other factors relating to our business strategy, goals and expectations concerning the Arq Acquisition (including future operations, future performance or results); the effect of the Arq Acquisition on our ability to hire key personnel; our ability to maintain relationships with customers, suppliers and other with whom we do business, or our results of operations and business generally; risks related to diverting management's attention from our ongoing business operations; the ability to meet Nasdaq's listing standards following the consummation of the Arq Acquisition; costs related to the Arq Acquisition; opportunities for additional sales of our lignite AC products and end-market diversification; our ability to meet customer supply requirements; the rate of coal-fired power generation in the U.S., 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 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, 2023.

Changes in Internal Control Over Financial Reporting

On February 1, 2023, we acquired Arq and excluded their business from our assessment of internal control over financial reporting as of June 30, 2023, as allowed under general guidance issued by the Staff of the Securities and Exchange Commission. 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, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. The Company is evaluating the impacts of the Arq Acquisition to our internal control over financial reporting as allowed under general guidance issued by the Staff of the Securities and Exchange Commission.

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 8 "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 2022 Form 10-K except as described below.

Bank failures or other events affecting financial institutions could have a material adverse effect on our business, results of operations or financial condition, or have other adverse consequences.

We primarily use one U.S. bank for our operations. The majority of our cash deposits are held by this bank and exceed the Federal Deposit Insurance Corporation ("FDIC") insurance limits. The failure of this bank or events involving limited liquidity, non-performance or other adverse conditions in the financial or credit markets impacting this bank, or concerns or rumors about such events, may lead to disruptions in access to our cash balances, adversely impact our liquidity or limit our ability to process transactions related to our customers. In the event of a failure of this bank, there can be no assurance that our deposits in excess of the FDIC or other comparable insurance limits will be recoverable or, even if ultimately recoverable, there may be significant delays in our ability to access those funds. Furthermore, bank failures, non-performance, or other adverse developments that affect other financial institutions could impair the ability of this bank to honor its commitments. Such events could have a material adverse effect on our financial condition or results of operations.

Similarly, our customers may be adversely affected by any bank failure or other event affecting financial institutions. If our customers are unable, or if our customers in the future are unable, to meet their obligations to us as a result of a bank failure or other event affecting financial institutions, we may be exposed to potential risks that could impact our financial condition or results of operations. Furthermore, a significant change in the liquidity or financial position of our customers could cause unfavorable trends in cash collections, which could have a material adverse effect on our financial condition or results of operations.

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
10.1	<u>Sixth Amendment to Tax Asset Protection Plan dated as of April 13, 2023, by and between the Company and Computershare Trust Company, N.A., as rights agent.</u>	8-K	001-37822	4.7	April 14, 2023
10.2	<u>Loan Modification Agreement dated as of June 2, 2023</u>	8-K	001-37822	10.1	June 6, 2023
31.1	<u>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)*</u>				
31.2	<u>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)*</u>				
32.1	<u>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*</u>				
95.1	<u>Mine Safety Disclosure Exhibit*</u>				
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*				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)*				

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 9, 2023

By: /s/ Robert Rasmus
Robert Rasmus
Chief Executive Officer
(Principal Executive Officer)

August 9, 2023

By: /s/ Morgan Fields
Morgan Fields
Chief Accounting Officer
(Principal Financial Officer)

Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as Amended

I, Robert Rasmus, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Advanced Emissions Solutions, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: August 9, 2023

/s/ Robert Rasmus

Robert Rasmus
Chief Executive Officer
(Principal Executive Officer)

Pursuant to Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as Amended

I, Morgan Fields, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Advanced Emissions Solutions, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: August 9, 2023

/s/ Morgan Fields

Morgan Fields
Chief Accounting Officer
(Principal Financial Officer)

Certification

Pursuant to

18 U.S.C. Section 1350,

as Adopted Pursuant to

Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the Quarterly Report on Form 10-Q of Advanced Emissions Solutions, Inc. (the "Company") for the quarterly period ended June 30, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Robert Rasmus, as the Principal Executive Officer of the Company, and Morgan Fields, as the Principal Financial Officer of the Company, each hereby certifies, pursuant to and solely for the purpose of 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, to the best of his knowledge and belief, that:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Robert Rasmus

Robert Rasmus
Chief Executive Officer

August 9, 2023

/s/ Morgan Fields

Morgan Fields
Chief Accounting Officer

August 9, 2023

Mine Safety and Health Administration Safety Data

We are committed to maintaining a safe work environment and working to ensure environmental compliance across all of our operations. The health and safety of our employees and limiting the impact to communities in which we operate are critical to our long-term success. We employ practices and conduct training to help ensure that our employees work safely. Furthermore, we utilize processes for managing, monitoring and improving safety and environmental performance.

The following disclosures are provided pursuant to Securities and Exchange Commission (SEC) regulations, which require certain disclosures by companies required to file periodic reports under the Securities Exchange Act of 1934, as amended, that operate coal mines regulated under the Federal Mine Safety and Health Act of 1977 (the "Mine Act"). The disclosures reflect United States (U.S.) mining operations only.

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

We are required to report citations and orders issued to us by MSHA during the three months ended June 30, 2023, as reflected in our systems. Our required disclosure covers only those mines that were issued orders or citations during the period presented and, commensurate with SEC regulations, does not reflect orders or citations issued to independent contractors working at our mines. Due to timing and other factors, our data may not agree with the mine data retrieval system maintained by MSHA. The proposed assessments for the three months ended June 30, 2023 were taken from the MSHA system as of August 7, 2023.

Additional information about MSHA references we are required to report is as follows:

- *Section 104 S&S Violations:* The total number of violations received from MSHA under section 104(a) of the Mine Act that could significantly and substantially contribute to a serious injury if left unabated.
- *Section 104(b) Orders:* The total number of orders issued by MSHA under section 104(b) of the Mine Act, which represents a failure to abate a citation under section 104(a) within the period of time prescribed by MSHA. This results in an order of immediate withdrawal from the area of the mine affected by the condition until MSHA determines that the violation has been abated.
- *Section 104(d) Citations and Orders:* The total number of citations and orders issued by MSHA under section 104(d) of the Mine Act for unwarrantable failure to comply with mandatory health or safety standards.
- *Section 104(e) Notices:* The total number of notices issued by MSHA under section 104(e) of the Mine Act for a pattern of violations that could contribute to mine health or safety hazards.
- *Section 110(b)(2) Violations:* The total number of flagrant violations issued by MSHA under section 110(b)(2) of the Mine Act.
- *Section 107(a) Orders:* The total number of orders issued by MSHA under section 107(a) of the Mine Act for situations in which MSHA determined an imminent danger existed.
- *Proposed MSHA Assessments:* The total dollar value of proposed assessments from MSHA.
- *Fatalities:* The total number of mining-related fatalities.

Our first mine is located in the Gulf Coast Lignite Region, in Natchitoches Parish, Louisiana (the "Five Forks Mine"). For the three months ended June 30, 2023, there were no reportable citations or orders issued to the Five Forks Mine. Our second mine is located in Knox, Kentucky ("Corbin Project"). For the three months ended June 30, 2023, there were no reportable citations or orders issued to Corbin Project. Our third mine is located in Mingo, West Virginia ("Mine Four"). For the three months ended June 30, 2023, there were no reportable citations or orders issued to Mine Four.

Pending Legal Actions. The Federal Mine Safety and Health Review Commission (the Commission) is an independent adjudicative agency that provides administrative trial and appellate review of legal disputes arising under the Mine Act. These cases may involve, among other questions, challenges by operators to citations, orders and penalties they have received from MSHA, or complaints of discrimination by miners under section 105 of the Mine Act. The following is a brief description of the types of legal actions that may be brought before the Commission.

- *Contests of Citations and Orders*: A contest proceeding may be filed with the Commission by operators, miners or miners' representatives to challenge the issuance of a citation or order issued by MSHA, including citations related to disputed provisions of operators' emergency response plans.
- *Contests of Proposed Penalties (Petitions for Assessment of Penalties)*: A contest of a proposed penalty is an administrative proceeding before the Commission challenging a civil penalty that MSHA has proposed for the violation. Such proceedings may also involve appeals of judges' decisions or orders to the Commission on proposed penalties, including petitions for discretionary review and review by the Commission on its own motion.
- *Complaints for Compensation*: A complaint for compensation may be filed with the Commission by miners entitled to compensation when a mine is closed by certain withdrawal orders issued by MSHA. The purpose of the proceeding is to determine the amount of compensation, if any, due miners idled by the orders.
- *Complaints of Discharge, Discrimination or Interference*: A discrimination proceeding is a case that involves a miner's allegation that he or she has suffered a wrong by the operator because he or she engaged in some type of activity protected under the Mine Act, such as making a safety complaint. This category includes temporary reinstatement proceedings, which involve cases in which a miner has filed a complaint with MSHA stating he or she has suffered discrimination and the miner has lost his or her position.
- *Applications for Temporary Relief*: An application for temporary relief from any modification or termination of any order or from any order issued under certain subparts of section 104 of the Mine Act may be filed with the Commission at any time before such order becomes final.
- *Appeals of Judges' Decisions or Orders*.

For the three months ended June 30, 2023, there were no pending or legal actions before the Commission at Five Forks Mine, Corbin Project or Mine Four.