

THORNTON JOHN D
Form 4
March 04, 2013

FORM 4

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

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
AV PARTNERS VIII LP

(Last) (First) (Middle)

300 WEST 6TH STREET, SUITE 2300

(Street)

AUSTIN, TX 78701-3902

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol
HOMEAWAY INC [AWAY]

3. Date of Earliest Transaction (Month/Day/Year)
02/28/2013

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

___ Director ___X___ 10% Owner
___ Officer (give title below) ___ Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)
___ Form filed by One Reporting Person
X Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Ownership (Instr. 4)			
			Code	V	Amount	(A) or (D)	Price			
Common Stock	02/28/2013		S		1,715,186	D	\$ 28.5	13,282,377	I	Austin Ventures VIII, L.P. (1)
Common Stock	02/28/2013		S		84,814	D	\$ 28.5	656,797	I	Austin Ventures X, L.P. (2)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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number.

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Beneficially Owned Following Reporting Transaction (Instr. 5)
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
AV PARTNERS VIII LP 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
AUSTIN VENTURES VIII LP 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
ARAGONA JOSEPH C 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
DEANGELIS KENNETH P 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
THORNTON JOHN D 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
PACITTI CHRISTOPHER A 300 WEST 6TH STREET, SUITE 2300 AUSTIN, TX 78701-3902		X		
AV Partners X, L.L.C. 300 WEST 6TH ST., SUITE 2300 AUSTIN, TX 78701		X		
		X		

AV Partners X, L.P.
300 WEST 6TH ST., SUITE 2300
AUSTIN, TX 78701

AUSTIN VENTURES X LP
300 WEST 6TH ST., SUITE 2300 X
AUSTIN, TX 78701

Signatures

Kevin A. Kunz, Attorney-in-fact for AV Partners VIII,
L.P. 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for Austin Ventures
VIII, L.P. 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for Joseph C. Aragona 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for Kenneth P.
DeAngelis 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for John D. Thornton 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for Christopher A.
Pacitti 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for AV Partners X,
L.L.C. 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for AV Partners X, L.P. 03/01/2013

__Signature of Reporting Person Date

Kevin A. Kunz, Attorney-in-fact for Austin Ventures X,
L.P. 03/01/2013

__Signature of Reporting Person Date

Explanation of Responses:

- * If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).
- ** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
 - (1) Shares held directly by Austin Ventures VIII, L.P. ("AV VIII"). AV Partners VIII, L.P. ("AVP VIII") is the general partner of AV VIII and may be deemed to have sole voting and dispositive power over the shares held by AV VIII. Joseph C. Aragona, Kenneth P. DeAngelis, John D. Thornton and Christopher A. Pacitti are the general partners of AVP VIII and may be deemed to share voting and dispositive power over the shares held by AV VIII. Such persons and entities disclaim beneficial ownership over the shares held by AV VIII except to the extent of any pecuniary interest therein.
 - (2) Shares held directly by Austin Ventures X, L.P. ("AV X"). AV Partners X, L.P. ("AVP X LP"), the general partner of AV X, and AV Partners X, L.L.C. ("AVP X LLC"), the general partner of AVP X LP, may be deemed to have sole voting and dispositive power over the shares held by AV X. Joseph C. Aragona, Kenneth P. DeAngelis, John D. Thornton, Christopher A. Pacitti and Philip S. Siegel are members of AVP X LLC and may be deemed to share voting and dispositive power over the shares held by AV X. Such persons and

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entities disclaim beneficial ownership of the shares held by AV X except to the extent of their pecuniary interest therein.

Remarks:

Joseph C. Aragona, Kenneth P. DeAngelis, John D. Thornton and Christopher A. Pacitti are the general partners of AV Partne

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a currently valid OMB number. LE="font-family: Times New Roman, Times, Serif"> .2 Loss from continuing operations

before taxes (2,010) (4.1) (4,823) (9.7)Income tax benefit (936) (1.9) (1,285) (2.6)Loss from continuing

operations \$(1,074) (2.2) \$(3,538) (7.1)

Revenue

Consolidated revenues decreased \$230,000 for the year ended December 31, 2018 compared to the year ended December 31, 2017, as follows:

(In thousands)	2018	% Revenue	2017	% Revenue	Change	% Change
<u>Treatment</u>						
Government waste	\$23,701	47.8	\$27,925	56.1	\$(4,224)	(15.1)
Hazardous/non-hazardous ⁽¹⁾	5,656	11.4	4,855	9.8	801	16.5
Other nuclear waste	6,914	14.0	4,970	10.0	1,944	39.1
Total	36,271	73.2	37,750	75.9	(1,479)	(3.9)
<u>Services</u>						
Nuclear	10,424	21.1	9,186	18.4	1,238	13.5
Technical	2,844	5.7	2,833	5.7	11	0.4
Total	13,268	26.8	12,019	24.1	1,249	10.4
Total	\$49,539	100.0	\$49,769	100.0	\$(230)	(0.5)

¹⁾ Includes wastes generated by government clients of \$1,594,000 and \$31,000 for the twelve months ended December 31, 2018 and the corresponding period of 2017, respectively.

Treatment Segment revenue decreased \$1,479,000, or 3.9 %, for the year ended December 31, 2018 over the same period in 2017. The revenue decrease was primarily due to lower revenue generated from government clients due to lower volume and lower averaged price waste resulting from waste mix. Other nuclear waste increased by approximately \$1,944,000, or 39.1%, primarily due to higher waste volume and higher averaged price waste. Revenue for our M&EC subsidiary (in closure status) decreased approximately \$6,157,000 for the twelve months ended December 31, 2018 as compared to the corresponding period of 2017 (\$155,000 in the twelve months of 2018 as compared to \$6,312,000 in the twelve months of 2017); however, our remaining Treatment Segment facilities had a total increase in revenue of approximately \$4,678,000 in the twelve months of 2018, as compared to the corresponding period of 2017 as we continue to transition operational capabilities from our M&EC subsidiary to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. Services Segment revenue increased by \$1,249,000, or 10.4%, for year ended December 31, 2018 over the same period in 2017. Our Services Segment revenues are project based; as such, the scope, duration and completion of each project vary. As a result, our Services Segment revenues are subject to differences relating to timing and project value.

Cost of Goods Sold

Explanation of Responses:

Cost of goods sold decreased \$71,000 for the year ended December 31, 2018, as compared to the year ended December 31, 2017, as follows:

(In thousands)	2018	% Revenue	2017	% Revenue	Change
Treatment	\$29,074	80.2	\$29,834	79.0	\$ (760)
Services	12,004	90.5	11,315	94.1	689
Total	\$41,078	82.9	\$41,149	82.7	\$ (71)

Cost of goods sold for the Treatment Segment decreased by \$760,000, or approximately 2.5%. Treatment Segment costs of goods sold for the year ended December 31, 2018 and 2017 included additional closure costs recorded in the amount of approximately \$3,323,000 and \$1,400,000, respectively, for our M&EC facility due to changes in estimated future closure costs in connection with the closure of the facility. Excluding the closure costs in both periods, Treatment Segment costs decreased \$2,683,000, or 9.4%. Total Treatment Segment's variable costs decreased by approximately \$1,214,000 primarily in disposal, transportation and material and supplies costs. Treatment Segment overall fixed costs were lower by approximately \$1,469,000 resulting from the following: depreciation expense was lower by approximately \$2,281,000 as the tangible assets at our M&EC facility became fully depreciated by the end of the third quarter of 2017 resulting from the pending closure of the facility; regulatory costs were lower by approximately \$63,000; maintenance expense was higher by \$21,000; salaries/payroll related/healthcare expenses were higher by \$658,000; travel expenses were higher by \$91,000; and general expenses were higher by \$105,000 in various categories. Services Segment cost of goods sold increased \$689,000, or 6.1%, primarily due to the increase in revenue as discussed above. The increase in Services Segment's cost of goods sold was primarily due to higher salaries and payroll related expenses, travel, and outside services expenses totaling approximately \$1,311,000 and higher material and supplies cost of approximately \$176,000. This overall higher cost in Services Segment's cost of goods sold was offset by lower disposal/transportation costs totaling approximately \$585,000 with the remaining lower costs in general expenses in various categories and lower depreciation expenses totaling approximately \$213,000. Included within cost of goods sold is depreciation and amortization expense of \$1,378,000 and \$3,720,000 for the twelve months ended December 31, 2018, and 2017, respectively.

Gross Profit

Gross profit for the year ended December 31, 2018 was \$159,000 lower than 2017 as follows:

(In thousands)	2018	% Revenue	2017	% Revenue	Change
Treatment	\$7,197	19.8	\$7,916	21.0	\$ (719)
Services	1,264	9.5	704	5.9	560
Total	\$8,461	17.1	\$8,620	17.3	\$ (159)

Excluding the \$3,323,000 and \$1,400,000 in closure costs recorded in the twelve months ended December 31, 2018 and 2017, respectively, within Treatment Segment's costs of goods sold discussed above in connection with the closure of the M&EC facility, our Treatment Segment had a gross profit increase of \$1,204,000, or 12.9%, and gross margin increased to 29.0% from 24.7% primarily due to the reduction in our fixed costs (as discussed above in costs of goods sold) and revenue mix. In the Services Segment, the increases in gross profit of \$560,000, or 79.5%, and gross margin to 9.5% from 5.9% was primarily due to the increase in revenue as discussed above. Additionally, our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

SG&A

SG&A expenses decreased \$360,000 for the year ended December 31, 2018 as compared to the corresponding period for 2017 as follows:

(In thousands)	2018	% Revenue	2017	% Revenue	Change
Administrative	\$4,947	—	\$4,788	—	\$ 159
Treatment	3,740	10.3	3,316	8.8	424
Services	2,054	15.5	2,997	24.9	(943)
Total	\$10,741	21.7	\$11,101	22.3	\$ (360)

The decrease in total SG&A was primarily due to lower SG&A costs in the Services Segment. The decrease in Services Segment SG&A of \$943,000 was primarily due to the following: outside services expenses were lower by approximately \$120,000 resulting from fewer consulting/legal/subcontract matters; bad debt expense was lower by approximately \$394,000 as we recorded an additional \$364,000 in bad debt expense during the fourth quarter of 2017 as certain accounts receivables were determined not to be collectible at December 31, 2017; general expenses were lower by approximately \$385,000 in various categories which included a reduction in rent expense resulting from the end of our lease term for our business center office in Knoxville, Tennessee (which was not renewed with the same

lessor) in the second quarter of 2018; and salaries and payroll related expense were lower by approximately \$44,000. The increase in Administrative SG&A was primarily due to the following: stock-based compensation expenses were higher by approximately \$68,000 resulting from options granted to our executive officers in July 2017 and options granted to certain of our employees in October 2017; salary/payroll related/healthcare costs were higher by approximately \$152,000; general expenses were lower by \$48,000 in various categories; and outside services expenses were lower by \$13,000 resulting from fewer consulting/business matters. Treatment SG&A expenses were higher primarily due to the following: general expenses were higher by approximately \$237,000 in various categories; travel expenses were higher by approximately \$48,000; outside services expenses were higher by \$88,000 resulting from more business/consulting matters; and bad debt expenses were higher by \$51,000. Included in SG&A expenses is depreciation and amortization expense of \$77,000 and \$83,000 for the twelve months ended December 31, 2018 and 2017, respectively.

R&D

R&D expenses decreased \$225,000 for the year ended December 31, 2018 as compared to the corresponding period of 2017 as follows:

(In thousands)	2018	2017	Change
Administrative	\$76	\$15	\$ 61
Treatment	483	439	44
Services	—	—	—
PF Medical	811	1,141	(330)
Total	\$1,370	\$1,595	\$ (225)

Research and development costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development of new technologies and technological enhancement of new potential waste treatment processes. The decrease in R&D costs for 2018 as compared to 2017 was primarily due to reduced R&D performed by our PF Medical Segment as discussed above.

Interest Income

Interest income increased \$155,000 for the year ended December 31, 2018 as compared to the corresponding period of 2017 primarily due to higher interest earned on the finite risk sinking funds resulting from higher interest rates.

Interest Expense

The decrease in interest expense of approximately \$64,000 for the twelve months ended December 31, 2018 as compared to the corresponding period of 2017 was primarily due to lower interest expense from our declining term loan balance and lower average revolver loan balance outstanding.

Income Taxes

We had income tax benefits of \$936,000 and \$1,285,000 for continuing operations for the years ended December 31, 2018 and 2017, respectively. The Company's effective tax rates were approximately 46.6% and 26.6% for the twelve months ended December 31, 2018 and 2017, respectively. Our tax benefit for 2018 included a tax benefit of

approximately \$1,235,000 recorded in 2018 resulting from the release of a portion of the valuation allowance on deferred tax assets related to indefinite-lived net operating losses generated due to the closure of our M&EC facility. Our tax benefit for 2017 included a tax benefit of approximately \$1,695,000 recorded in the fourth quarter of 2017 resulting primarily from the required re-measurement of our deferred assets and liabilities and the reversal of valuation allowance and refunding of alternative minimum tax (“AMT”) credit carryforward. These tax benefits were recorded as a result of the TCJA enacted into law in December 22, 2017 (see “Critical Accounting Policies” in this section for a further discussion of the Tax Act and the tax benefits recorded).

Discontinued Operations

Our discontinued operations consist of all our subsidiaries included in our Industrial Segment which were divested in 2011 and prior, previously closed locations, and our Perma-Fix of South Georgia, Inc. (“PFSG”) facility which is undergoing final closure, subject to regulatory approval of necessary plans and permits.

Our discontinued operations had no revenue for the twelve months ended December 31, 2018 and 2017. We incurred net losses of \$667,000 and \$592,000 for our discontinued operations for the twelve months ended December 31, 2018 and 2017, respectively (net of taxes of \$0 for each period). Our net loss for the year ended December 31, 2018 included an increase of approximately \$50,000 in remediation reserve recorded in the second quarter of 2018 for our Perma-Fix of Dayton (“PFD”) subsidiary due to reassessment of the remediation reserve, with the remaining loss incurred primarily due to costs incurred in the administration and continued monitoring of our discontinued operations. The loss incurred for 2017 was primarily due to costs incurred in the administration and continued monitoring of our discontinued operations.

Liquidity and Capital Resources

Our cash flow requirements during 2018 were primarily financed by our operations and credit facility availability. We generated positive cash flow from our operations of approximately \$1,960,000, which included cash outlays of approximately \$5,400,000 in operating and closure spending for our M&EC facility, which is in closure status. Our cash flow requirements for the next twelve months will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, planned capital expenditures, and remaining spending requirements in connection with the closure of our M&EC facility. We plan to fund these requirements from our operations, credit facility availability and proceeds of approximately \$2,500,000 from a loan that was consummated on April 1, 2019 (see “Financing Activities” below for further information of the agreement and note). Additionally, as a result of the M&EC facility closure, we expect to receive, by the end of the second quarter of 2019, a release of approximately \$5,000,000 of the \$15,971,000 restricted finite risk sinking funds held by American International Group (“AIG”) as collateral under the financial assurance policy dated June 2003 that we currently have with AIG. The release of this finite risk sinking fund is subject to approval from AIG and the appropriate regulators, and, when released, we expect will further enhance our liquidity and improve our working capital deficit. We continue to explore all sources of increasing revenue. We are continually reviewing operating costs and are committed to further reducing operating costs to bring them in line with revenue levels, when necessary. Although there are no assurances, we believe that our cash flows from operations, our available liquidity from our credit facility and loan proceeds of \$2,500,000 received from the loan described below should be sufficient to fund our operations for the next twelve months. Additionally, the finite risk sinking funds that we expect to receive as a result of the M&EC facility closure as discussed above will provide additional funding for our operations as needed and improve our working capital. As previously disclosed, our Medical Segment substantially reduced its R&D activities due to the need for capital to fund such activities. We continue to seek various sources of potential funding for our Medical Segment. We anticipate that our Medical Segment will not resume full R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise or obtaining new partners willing to fund its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

The following table reflects the cash flow activity for the year ended December 31, 2018 and the corresponding period of 2017:

(In thousands)	2018	2017
Cash provided by operating activities of continuing operations	\$2,578	\$1,089
Cash used in operating activities of discontinued operations	(618)	(647)
Cash used in investing activities of continuing operations	(1,385)	(409)
Cash provided by investing activities of discontinued operations	67	69
Cash used in financing activities of continuing operations	(580)	(5,022)
Effect of exchange rate changes on cash	(20)	9
Increase (decrease) in cash and finite risk sinking fund (restricted cash)	\$42	\$(4,911)

Explanation of Responses:

At December 31, 2018, we were in a net borrowing position (revolving credit) of approximately \$639,000. At December 31, 2018, we had cash on hand of approximately \$810,000, which reflects primarily account balances of our foreign subsidiaries totaling approximately \$806,000.

Operating Activities

Accounts receivable, net of allowances for doubtful accounts, totaled \$7,735,000 at December 31, 2018, a decrease of \$205,000 from the December 31, 2017 balance of \$7,940,000. The decrease was primarily due to timing of invoicing and timing of accounts receivable collection. We provide a variety of payment terms to our customers; therefore, our accounts receivable are impacted by these terms and the related timing of accounts receivable collections.

Accounts payable, totaled \$5,497,000 at December 31, 2018, an increase of \$1,960,000 from the December 31, 2017 balance of \$3,537,000. The increase in accounts payable was attributed to closure related expenses for our M&EC facility which are pending payment. Additionally, our accounts payable are impacted by the timing of payments as we are continually managing payment terms with our vendors to maximize our cash position throughout all segments.

Disposal/transportation accrual at December 31, 2018, totaled \$1,542,000, a decrease of \$529,000 over the December 31, 2017 balance of \$2,071,000. Our disposal accrual can vary based on revenue mix and the timing of waste shipments for final disposal. During 2018, we shipped more waste for disposal than 2017.

We had a working capital deficit of \$6,753,000 (which included working capital of our discontinued operations) at December 31, 2018 as compared to a working capital deficit of \$2,268,000 at December 31, 2017. The additional accrual of \$3,323,000 in closure costs we recorded in 2018 in connection with the closure of our M&EC facility negatively impacted our working capital. Additionally, our working capital was also negatively impacted by the increase of our unearned revenue. The loan proceeds of \$2,500,000 that we received from a loan agreement consummated on April 1, 2019 as discussed below has improved our working capital deficit. Additionally, we anticipate that cash flows to be generated from our operations and the release of the restricted finite sinking funds by AIG of \$5,000,000 which we anticipate to receive upon the closure of our M&EC facility as discussed above, will provide further improvement to our working capital deficit.

Investing Activities

During 2018, our purchases of capital equipment totaled approximately \$1,977,000, of which \$545,000 was financed, with the remaining funded from cash from operations and our credit facility. These expenditures were made primarily for our Treatment Segment. We have budgeted approximately \$1,500,000 for 2019 capital expenditures for our Treatment and Services Segments to maintain operations and regulatory compliance requirements and continued footprint expansion for one of our Treatment Segment facilities. Certain of these budgeted projects may either be delayed until later years or deferred altogether. We have traditionally incurred actual capital spending totals for a given year at less than the initial budgeted amount. We plan to fund our capital expenditures from cash from operations and/or financing. The initiation and timing of projects are also determined by financing alternatives or funds available for such capital projects.

Financing Activities

We entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 (“Amended Loan Agreement”), with PNC National Association (“PNC”), acting as agent and lender. The Amended Loan Agreement, as subsequently amended (“Revised Loan Agreement”), provides us with the following credit facility

with a maturity date of March 24, 2021: (a) up to \$12,000,000 revolving credit (“revolving credit”) and (b) a term loan (“term loan”) of approximately \$6,100,000, which requires monthly installments of approximately \$101,600 (based on a seven-year amortization). The maximum that we can borrow under the revolving credit is based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

Under the Revised Loan Agreement, we have the option of paying an annual rate of interest due on the revolving credit at prime (5.50% at December 31, 2018) plus 2% or London Inter Bank Offer Rate (“LIBOR”) plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%.

Pursuant to the Revised Loan Agreement, we may terminate the Revised Loan Agreement, upon 90 days’ prior written notice upon payment in full of our obligations under the Revised Loan Agreement. We agree to pay PNC 0.25% of the total financing if we pay off our obligations after March 23, 2018 but prior to or on March 23, 2019. No early termination fee shall apply if we pay off our obligations after March 23, 2019.

At December 31, 2018, the borrowing availability under our revolving credit was \$2,368,000, based on our eligible receivables and includes an indefinite reduction of borrowing availability of \$1,000,000 that our lender has imposed. Our borrowing availability under our revolving credit was also reduced by outstanding standby letters of credit totaling approximately \$2,648,000. Previously, our lender had imposed an indefinite reduction of borrowing availability of \$2,000,000; however, on July 26, 2018, we entered into an amendment to our Revised Loan Agreement with our lender which provided, among other things, for the release of \$1,000,000 of the \$2,000,000 reduction in borrowing availability by our lender. The release of this \$1,000,000 in borrowing availability reduction was used for working capital purposes.

On March 29, 2019, we entered into another amendment to our Revised Loan Agreement with our lender under the credit facility which provided the following:

waived our failure to meet the minimum quarterly fixed charge coverage ratio (“FCCR”) requirement for the fourth quarter of 2018 as discussed below;
 waived the quarterly FCCR testing requirement for the first quarter of 2019;
 revised the methodology to be used in calculating the FCCR in each of the second and third quarters of 2019 (with continued requirement to maintain a minimum 1.15:1 ratio in each of the quarters);
 revised the minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from \$26,000,000 to \$25,000,000;
 eliminated the LIBOR interest payment option of paying annual rate of interest due on our term loan and revolving credit until we become compliant with our FCCR requirement again. As a result of this amendment, our payment of annual rate of interest due on our term loan will be at prime plus 2.5% and prime plus 2.0% for our revolving credit;
 provided consent for the \$2,500,000 loan that we entered into with Robert Ferguson as discussed below. We are not allowed to make any principal prepayment on this loan until we receive the restricted finite risk sinking funds held as collateral by AIG under our financial assurance policy. We expect to receive this restricted funds resulting from the closure of our M&EC facility (see “Liquidity and Capital Resources” for a discussion of this expected receipt); and
 revised the annual rate used to calculate the Facility Fee (as defined in the Revised Loan Agreement) (“unused revolving credit line fee”) from 0.250% to 0.375%.

Most of the other terms of the Revised Loan Agreement remain principally unchanged. In connection with this amendment, we paid our lender a fee of \$20,000.

Our credit facility with our lender contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by our lender, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. The following table illustrates the most significant quarterly financial covenant requirements under our credit facility at December 31, 2018.

	Quarterly	1st	2nd	3rd	4th
(Dollars in thousands)	Requirement	Quarter	Quarter	Quarter	Quarter
Senior Credit Facility		Actual	Actual	Actual	Actual
Fixed charge coverage ratio	1.15:1	1.22:1	1.72:1	1.39:1	1.13:1
Minimum tangible adjusted net worth	\$ 26,000	\$27,038	\$28,364	\$28,686	\$26,133

We met our financial covenant requirements in 2018 with the exception of our minimum quarterly FCCR requirement for the fourth quarter of 2018; however, our lender waived this non-compliance as discussed above. As a result of the amendment discussed above which provides for further amendments to our quarterly FCCR requirements, we expect to meet our financial covenant requirements in the next twelve months; however, if we fail to meet any of our

financial covenant requirements and our lender does not further waive the non-compliance or revise our covenant so that we are in compliance, our lender could accelerate the repayment of borrowings under our credit facility. In the event that our lender accelerates the payment of our borrowings, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

On April 1, 2019, we completed a lending transaction with Robert Ferguson (the “Lender”), whereby we borrowed from the Lender the sum of \$2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the “Loan”). The Lender is a shareholder of the Company. The Lender also currently serves as a consultant to the Company’s PFNWR subsidiary (see “Related Party Transactions – Robert Ferguson” for further information). The proceeds from the Loan will be used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately \$208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also provides for prepayment of principal payments over the term of the Loan without penalty. In connection with the above Loan, the Lender entered into a Subordination Agreement with our credit facility lender, whereby the Lender agreed to subordinate payment under the Loan, and agreed that the Loan will be junior in right of payment to the credit facility in the event of default or bankruptcy or other insolvency proceeding by us. As consideration for us receiving the Loan, we issued a Warrant to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of \$3.51, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024. As further consideration for the Loan, we also will issue 75,000 shares of our Common Stock, to the Lender. The 75,000 shares of Common Stock and 60,000 Common Stock purchase warrant will be and was issued in a private placement that was exempt from registration under the Securities Act of 1933, as amended (the “Securities Act”) and bear a restrictive legend against resale except in a transaction registered under the Securities Act or in a transaction exempt from registration thereunder.

Upon default, the Lender will have the right to elect to receive in full and complete satisfaction of our obligations under the Loan either: (a) the cash amount equal to the sum of the unpaid principal balance owing under the loan and all accrued and unpaid interest thereon (the “Payoff Amount”) or (b) upon meeting certain conditions, the number of whole shares of our Common Stock (the “Payoff Shares”) determined by dividing the Payoff Amount by the dollar amount equal to the closing bid price of our Common Stock on the date immediately prior to the date of default, as reported or quoted on the primary nationally recognized exchange or automated quotation system on which our Common Stock is listed; provided however, that the dollar amount of such closing bid price shall not be less than \$3.51, the closing bid price for our Common Stock as disclosed on NASDAQ.com immediately preceding the signing of this loan agreement.

If issued, the Payoff Shares will not be registered and the Lender will not be entitled to registration rights with respect to the Payoff Shares. The aggregate number of shares, warrant shares, and Payoff Shares that are or will be issued to the Lender pursuant to the Loan, together with the aggregate shares of our Common Stock and other voting securities owned by the Lender as of the date of issuance of the Payoff Shares, shall not exceed the number of shares of our Common Stock equal to 14.9% of the number of shares of our Common Stock issued and outstanding as of the date immediately prior to the default, less the number of shares of our Common Stock owned by the Lender immediately prior to the date of such default plus the number of shares of our Common Stock that may be acquired by the Lender under warrants and/or options outstanding immediately prior to the date of such default.

We are currently evaluating the accounting treatment of this transaction and the impact to our financial statements.

M&EC Series B Preferred Stock

The 1,284,730 shares of the non-voting Series B Preferred Stock (the “Series B Preferred Stock”) of our consolidated wholly-owned subsidiary, M&EC, were exchanged by us for our Common Stock in a private exchange offer exempt from registration (the “Exchange Offer”). Holders of shares of M&EC Series B Preferred Stock were entitled to receive, when, as and if declared by M&EC’s Board of Directors (“Board”) out of funds legally available for payment, cumulative dividends at the rate per annum of 5% per share on the liquidation preference of \$1.00 per share of Series B Preferred Stock. Dividends on the Series B Preferred Stock accrued without interest beginning one year from the date of original issuance (June 25, 2001), and was payable in cash, if, when, and as declared by M&EC Board, quarterly each year commencing on the first dividend due date following the expiration of one year from the date of original issuance. The Exchange Offer, to all 13 holders of the M&EC Series B Preferred Stock, was to exchange, in a private placement exempt from registration, for every share of Series B Preferred Stock tendered, (a) 0.1050805 shares of our newly issued common stock, par value \$.001 per share (“Common Stock”), and (b) cash in lieu of fractional shares of Common Stock that would otherwise be issuable to the tendering holder of Series B Preferred Stock, in an amount equal to such fractional share of Common Stock multiplied by the closing price per share of the Common Stock on the last trading day immediately preceding the expiration date of the Exchange Offer. The Exchange Offer for all 1,284,730 shares of Series B Preferred Stock outstanding and had an expiration date of May 30, 2018. We own 100% of the voting capital stock of M&EC. On May 30, 2018, the Exchange Offer was consummated resulting in the issuance of an aggregate 134,994 shares of our Common Stock in exchange for the

1,284,730 shares of Series B Preferred Stock and the payment of an aggregate of approximately \$29.00 in cash in lieu of the fractional shares of our Common Stock that would otherwise have been issuable to the tendering holders of the Series B Preferred Stock. The fair value of the 134,994 unregistered shares of our Common Stock issued was determined to be approximately \$648,000 which was based on the closing price of our Common Stock on May 30, 2018 of \$4.80 per share. Upon the consummation of the Exchange Offer, the previous holders of the M&EC Series B Preferred Stock forfeited all rights of a holder of Series B Preferred Shares, including the right to receive quarterly cash dividends, and the rights to the cumulative accrued and unpaid dividends with M&EC Series B Preferred Stock in the amount of approximately \$1,022,000 at May 30, 2018. The M&EC Board never declared dividends on the Series B Preferred Stock and our credit facility prohibits the payment of cash dividends without the lender's consent. After the Exchange Offer, the 1,284,730 shares of the Series B Preferred Stock acquired by us were contributed by us to M&EC and the Series B Preferred Stock is no longer outstanding. We recorded a gain of approximately \$1,596,000 in the second quarter of 2018, which was net of approximately \$63,000 in legal expenses incurred for the completion of the transaction.

The shares of our Common Stock issued in exchange for shares of M&EC's Series B Preferred Stock were issued pursuant to an exemption from registration under the Securities Act, and, as a result, were considered restricted securities when issued.

Off Balance Sheet Arrangements

We have a number of routine non-cancelable operating leases, primarily related to office space rental, office equipment rental and equipment rental for contract projects and operations at December 31, 2018, which total approximately \$1,392,000, payable as follows: \$575,000 in 2019; \$406,000 in 2020; \$308,000 in 2021; with the remaining \$103,000 in 2022.

From time to time, we are required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At December 31, 2018, the total amount of standby letters of credit outstanding totaled approximately \$2,648,000 and the total amount of bonds outstanding totaled approximately \$11,284,000. We also provide closure and post-closure requirements through a financial assurance policy for certain of our Treatment Segment facilities through AIG. At December 31, 2018, the closure and post-closure requirements for these facilities were approximately \$29,977,000.

Critical Accounting Policies

In preparing the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("US GAAP"), management makes estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. We believe the following critical accounting policies affect the more significant estimates used in preparation of the consolidated financial statements:

Revenue Recognition Estimates. In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue from Contracts with Customers" followed by a series of related accounting standard updates (collectively referred to as "Topic 606"). Topic 606 provides a single, comprehensive revenue recognition model for all contracts with customers. Under the new standard, a five-step process is utilized in order to determine revenue recognition, depicting the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. We adopted Topic 606 effective January 1, 2018. The adoption of Topic 606 did not result in significant changes to our revenues within our segments. Under Topic 606, a performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract transaction price is allocated to each distinct performance

obligation and recognized as revenues as the performance obligation is satisfied.

Treatment Segment Revenues:

Contracts in our Treatment Segment have a single performance obligation as the promise to receive, treat and dispose of waste is not separately identifiable in the contract and, therefore, not distinct. Performance obligations are generally satisfied over time using the input method. Under the input method, the Company uses a measure of progress divided into major phases which include receipt (generally ranging from 9.0% to 33%), treatment/processing and shipment/final disposal. As major processing phases are completed and the costs are incurred, the proportional percentage of revenue is recognized. Transaction price for Treatment Segment contracts are determined by the stated fixed rate per unit price as stipulated in the contract.

Services Segment Revenues:

Revenues for our Services Segment are generated from time and materials, cost reimbursement or fixed price arrangements:

Our primary obligation to customers in time and materials contracts relate to the provision of services to the customer at the direction of the customer. This provision of services at the request of the customer is the performance obligation, which is satisfied over time. Revenue earned from time and materials contracts is determined using the input method and is based on contractually defined billing rates applied to services performed and materials delivered.

Our primary performance obligation to customers in cost reimbursement contracts is to complete certain tasks and work streams. Each specified work stream or task within the contract is considered to be a separate performance obligation. The transaction price is calculated using an estimated cost to complete the various scope items to achieve the performance obligation as stipulated in the contract. An estimate is prepared for each individual scope item in the contract and the transaction price is allocated on a time and materials basis as services are provided. Revenue from cost reimbursement contracts is recognized over time using the input method based on costs incurred, plus a proportionate amount of fee earned.

Under fixed price contracts, the objective of the project is not attained unless all scope items within the contract are completed and all of the services promised within fixed fee contracts constitute a single performance obligation. Transaction price is estimated based upon the estimated cost to complete the overall project. Revenue from fixed price contracts is recognized over time using the output or input method. For the output method, revenue is recognized based on milestone attained on the project. For the input method, revenue is recognized based on costs incurred on the project relative to the total estimated costs of the project.

Allowance for Doubtful Accounts. The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that are uncollectible. We regularly review all accounts receivable balances that exceed 60 days from the invoice date and, based on an assessment of current credit worthiness, estimate the portion, if any, of the balances that are uncollectible. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category (5% for balances 61-90 days, 20% for balances 91-120 days and 40% for balances over 120 days aged), based on a historical collections patterns, that allows us to calculate the total allowance required. This analysis excludes government related receivables due to our past successful experience in their collectability. Our allowance was approximately 0.2% of revenue for 2018 and 1.3% of accounts receivable at December 31, 2018. Additionally, this allowance was approximately 1.4% of revenue for 2017 and 8.3% of accounts receivable at December 31, 2017.

Intangible Assets. Intangible assets consist primarily of the recognized value of the permits required to operate our business. We continually monitor the propriety of the carrying amount of our permits to determine whether current events and circumstances warrant adjustments to the carrying value.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, we perform a quantitative test to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long term discount rates.

Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2018 and 2017 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. We have one definite-lived permit which was excluded from our annual impairment review as noted above. The net carrying value of this one definite-lived permit at December 31, 2018 and 2017 was approximately \$7,000 and \$62,000, respectively. Intangible assets with definite useful lives are also tested for impairment whenever events or changes in circumstances indicate that the asset's carrying value may not be recoverable.

Accrued Closure Costs and Asset Retirement Obligations (“ARO”). Accrued closure costs represent our estimated environmental liability to clean up our facilities as required by our permits, in the event of closure. ASC 410, “Asset Retirement and Environmental Obligations” requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO’s are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, we must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flow. Increases in the ARO liability due to passage of time impact net income as accretion expense and are included in cost of goods sold in the Consolidated Statements of Operations. Changes in the estimated future cash flows costs underlying the obligations (resulting from changes or expansion at the facilities) require adjustment to the ARO liability calculated and are capitalized and charged as depreciation expense, in accordance with our depreciation policy.

Accrued Environmental Liabilities. We have three remediation projects in progress (all within discontinued operations). The current and long-term accrual amounts for the projects are our best estimates based on proposed or approved processes for clean-up. The circumstances that could affect the outcome range from new technologies that are being developed every day to reduce our overall costs, to increased contamination levels that could arise as we complete remediation which could increase our costs, neither of which we anticipate at this time. In addition, significant changes in regulations could adversely or favorably affect our costs to remediate existing sites or potential future sites, which cannot be reasonably quantified (See “Environmental Contingencies” below for further information of these liabilities).

Disposal/Transportation Costs. We accrue for waste disposal based upon a physical count of the waste at each facility at the end of each accounting period. Current market prices for transportation and disposal costs are applied to the end of period waste inventories to calculate the disposal accrual. Costs are calculated using current costs for disposal, but economic trends could materially affect our actual costs for disposal. As there are limited disposal sites available to us, a change in the number of available sites or an increase or decrease in demand for the existing disposal areas could significantly affect the actual disposal costs either positively or negatively.

Stock-Based Compensation. We account for stock-based compensation in accordance with ASC 718, “Compensation – Stock Compensation.” ASC 718 requires all stock-based payments to employees, including grant of options, to be recognized in the income statement based on their fair values. We account for stock-based compensation issued to consultants in accordance with the provisions of ASC 505-50, “Equity-Based Payments to Non-Employees.” We use the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock-based awards include the exercise price of the award, the expected term, the expected volatility of our stock over the stock-based award’s expected term, the risk-free interest rate over the award’s expected term, and the expected annual dividend yield. We account for forfeitures when they occur.

Income Taxes. The provision for income tax is determined in accordance with ASC 740, "Income Taxes." We are required to estimate our income taxes in each of the jurisdictions in which we operate. We record this amount as a provision or benefit for taxes. This process involves estimating our actual current tax exposure, including assessing the risks associated with tax audits, and assessing temporary differences resulting from different treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities. We assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent that we believe recovery is not likely, we establish a valuation allowance.

On December 22, 2017, the TCJA was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 35% to 21% for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system, the elimination of AMT for corporations and a one-time transition tax on the mandatory deemed repatriation of foreign earnings.

As of December 31, 2018, we have completed our accounting for the tax effects of the enactment of the TCJA under the guidance of Staff Accounting Bulletin No. 118 (“SAB 118”) (issued December 22, 2017), which provides registrants an one-year measurement period to report the impact of the TCJA.

Specific to the enactment of the TCJA, we recognized a tax benefit of \$1,695,000 in the fourth quarter of 2017 which consisted of \$916,000 related to the re-measurement of deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future and \$779,000 related to the reversal of valuation allowance and refunding of AMT credit carryforwards.

An additional provision of the TJCA was to provide an indefinite carryforward period for net operating losses (“NOLs”) generated starting in 2018. Also, the law limits the utilization of these NOLs to 80% of taxable income in the year in which the NOL is utilized. We have been carrying on our balance sheet a deferred tax liability related to indefinite-lived intangible assets. A common accounting interpretation of the Tax Act provisions is that deferred tax assets related to indefinite-lived NOLs may now be used to offset indefinite-lived deferred tax liabilities, up to 80% of the amount of the liability. During 2018, we forecasted a substantial tax loss for the full year due to the closure of the M&EC facility. As a result, we released a portion of the valuation allowance against deferred tax assets equal to 80% of the deferred tax liability related to indefinite-lived intangible assets and recorded a tax benefit in the amount of approximately \$1,235,000 in accordance to the provisions of the TCJA.

The global intangible low-taxed income (“GILTI”) provisions under the TCJA require us to include in our U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. We have elected to account for GILTI tax in the period in which it is incurred, and therefore have not provided any deferred tax impacts of GILTI in our consolidated financial statements for the years ended December 31, 2017 and 2018. As our foreign subsidiaries are all in loss positions for 2018, there is no GILTI inclusion for the current year.

The base-erosion and anti-abuse tax provisions (“BEAT”) in the TCJA eliminates the deduction of certain base-erosion payments made to related foreign corporations, and imposes a minimum tax if greater than regular tax. We do not expect we will be subject to this tax due to the immaterial amounts of outbound U.S. payments and therefore have not included any tax impacts of BEAT in our consolidated financial statements for the years ended December 31, 2017 and 2018.

The TCJA imposes a one-time transition tax on previously untaxed earnings and profits of foreign subsidiaries. As of December 31, 2018, we have current and accumulated deficits in earnings and profits for all of our foreign subsidiaries. As such, we do not expect any exposure to the one-time transition tax.

As of December 31, 2018, we had net deferred tax assets of approximately \$10,479,000 (which excludes a deferred tax liability relating to goodwill and indefinite lived intangible assets) which were primarily related to federal and state net NOL carryforwards, impairment charges, and closure costs. As of December 31, 2018, we concluded that it was more likely than not that \$10,479,000 of our deferred income tax assets would not be realized, and as such, a full valuation allowance was applied against those deferred income tax assets. Our net operating losses are subject to audit by the Internal Revenue Services, and, as a result, the amounts could be reduced.

As of December 31, 2018, we have approximately \$21,277,000 and \$76,312,000 in NOL carryforwards for federal and state income tax purposes, respectively, which will expire in various amounts starting in 2021 if not used against future federal and state income tax liabilities, respectively. Our net loss carryforwards are subject to various limitations. Our ability to use the net loss carryforwards depends on whether we are able to generate sufficient income in the future years.

Known Trends and Uncertainties

Economic Conditions. Our business continues to be heavily dependent on services that we provide to governmental clients (including the U.S. Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”)) directly as the prime contractor or indirectly for others as a subcontractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including the current economic conditions, the large budget deficit that the government is facing, and the manner in which the government will be required to spend funding to remediate federal sites. In addition, our governmental contracts and subcontracts relating to activities at governmental sites are generally subject to termination or renegotiation on 30 days notice at the government’s option. Significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows.

Significant Customers. Our Treatment and Services Segments have significant relationships with the federal government, and continue to enter into contracts, directly as the prime contractor or indirectly for others as a subcontractor, with the federal government. The contracts that we are a party to with the federal government or with others as a subcontractor to the federal government generally provide that the government may terminate or renegotiate the contracts on 30 days notice, at the government’s election. Our inability to continue under existing contracts that we have with the federal government (directly or indirectly as a subcontractor) could have a material adverse effect on our operations and financial condition.

We performed services relating to waste generated by domestic government clients (includes U.S federal, state and local), either directly as a prime contractor or indirectly as a subcontractor to government entities, representing approximately \$34,811,000 or 70.3% of our total revenue during 2018, as compared to \$37,019,000 or 74.4% of our total revenue during 2017.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Contract Awards. During the latter part of March 2019, we were awarded several contracts within our Services Segment which includes remediation work for DOE locations throughout the United States. Additionally, our Services Segment has received a notice of contract award with a value of approximately \$9,000,000, which includes remediation work in Canada with an expected effective date of April 1, 2019. The contract for the Canadian remediation project has not yet been executed by the parties, and we expect that this contract will be finalized during the early part of the second quarter of 2019. The total contract value of these awards is expected to be approximately \$17,000,000 through 2019.

Environmental Contingencies

We are engaged in the waste management services segment of the pollution control industry. As a participant in the on-site treatment, storage and disposal market and the off-site treatment and services market, we are subject to rigorous federal, state and local regulations. These regulations mandate strict compliance and therefore are a cost and concern to us. Because of their integral role in providing quality environmental services, we make every reasonable attempt to maintain complete compliance with these regulations; however, even with a diligent commitment, we, along with many of our competitors, may be required to pay fines for violations or investigate and potentially remediate our waste management facilities.

We routinely use third party disposal companies, who ultimately destroy or secure landfill residual materials generated at our facilities or at a client's site. In the past, numerous third party disposal sites have improperly managed waste and consequently require remedial action; consequently, any party utilizing these sites may be liable for some or all of the remedial costs. Despite our aggressive compliance and auditing procedures for disposal of wastes, we could further be notified, in the future, that we are a potentially responsible party ("PRP") at a remedial action site, which could have a material adverse effect.

We have three remediation projects, which are currently in progress at our PFD, Perma-Fix of Memphis, Inc. ("PFM" – closed location), and PFSG (in closure status) subsidiaries. We divested PFD in 2008; however, the environmental liability of PFD was retained by us upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators. While no assurances can be made that we will be able to do so, we expect to fund the expenses to remediate these sites from funds generated internally.

At December 31, 2018, we had total accrued environmental remediation liabilities of \$887,000, of which \$50,000 are recorded as a current liability, an increase of \$16,000 from the December 31, 2017 balance of \$871,000. The net increase presents an increase of approximately \$50,000 made to the reserve at our PFD subsidiary due to reassessment of the remediation reserve and payments of approximately \$34,000 on remediation projects for our PFD and PFSG subsidiaries.

Related Party Transactions

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$173,000 and \$168,000 for 2018 and 2017, respectively. David Centofanti is the son of Dr. Louis Centofanti, our Executive Vice President (“EVP”) of Strategic Initiatives and a Board of Director (“Board”) member. Dr. Louis Centofanti previously held the position of President and Chief Executive Office (“CEO”) until September 8, 2017. We believe the compensation received by David Centofanti for his technical expertise which he provides to us is competitive and comparable to compensation we would have to pay to an unaffiliated third party with the same technical expertise.

Robert Ferguson

Robert Ferguson serves as an advisor to our Board and was also a member of the Supervisory Board of PF Medical (until May 11, 2018), a majority-owned Polish subsidiary of the Company. Robert Ferguson previously served as a Board member of the Company from June 2007 to February 2010 and again from August 2011 to September 2012. Robert Ferguson is also a consultant for us in connection with our Test Bed Initiative (“TBI”) at our Perma-Fix Northwest Richland, Inc. (“PFNWR”) facility. As an advisor to our Board, Robert Ferguson is paid \$4,000 monthly plus reasonable expenses. For such services, Robert Ferguson received compensation of approximately \$50,000 and \$51,000 for the year ended December 31, 2018 and 2017, respectively. For Robert Ferguson’s consulting work in connection with our TBI, on July 27, 2017 (“grant date”), we granted Robert Ferguson a non-qualified stock option from our 2017 Stock Option Plan for the purchase of up to 100,000 shares of the Company’s Common Stock at an exercise price of \$3.65 a share, which was the fair market value of our Common Stock on the date of grant (“Ferguson Stock Option”). The vesting of the Ferguson Stock Option is subject to the achievement of the following milestones (“waste” as noted below is defined as liquid LAW (“low activity waste”) and/or liquid TRU (“transuranic waste”)):

Upon treatment and disposal of three gallons of waste at the PFNWR facility by January 27, 2018, 10,000 shares of the Ferguson Stock Option shall become exercisable;

Upon treatment and disposal of 2,000 gallons of waste at the PFNWR facility by January 27, 2019, 30,000 shares of the Ferguson Stock Option shall become exercisable; and

Upon treatment and disposal of 50,000 gallons of waste at the PFNWR facility and assistance, on terms satisfactory to the Company, in preparing certain justifications of cost and pricing data for the waste and obtaining a long-term commercial contract relating to the treatment, storage and disposal of waste by January 27, 2021, 60,000 shares of the Ferguson Stock Option shall become exercisable.

The term of the Ferguson Stock Option is seven (7) years from the grant date. Each of the milestones is exclusive of each other; therefore, achievement of any of the milestones above by Robert Ferguson by the designated date will provide Robert Ferguson the right to exercise the number of options in accordance with the milestone attained. The 10,000 options as noted above became vested by Robert Ferguson on December 19, 2017. The fair value of the 10,000 options was determined to be approximately \$20,000. On May 1, 2018, Robert Ferguson exercised the 10,000 options for the purchase of 10,000 shares of our Common Stock, resulting in total proceeds paid to us of approximately \$36,500.

On January 17, 2019, the Ferguson Stock Option was amended whereby the vesting date of the Ferguson Stock Option for the second milestone as discussed above was amended from “by January 27, 2019” to “by March 31, 2020.” All other terms of the Ferguson Stock Option remain unchanged.

On April 1, 2019, we executed a loan and securities purchase agreement and promissory note with Robert Ferguson for a \$2,500,000 loan (see “Liquidity and Capital Resources - Financing Activities” of this MD&A for further information of the loan agreement).

Employment Agreements

We entered into employment agreements with each of Mark Duff (President and CEO), Ben Naccarato (Chief Financial Officer (“CFO”)), and Dr. Louis Centofanti, (EVP of Strategic Initiatives), with each employment dated September 8, 2017. Each of the employment agreements is effective for three years from September 8, 2017 (the “Initial Term”) unless earlier terminated by us or by the executive officer. At the end of the Initial Term of each employment agreement, each employment agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, we or the executive officer provides written notice not to extend the terms of the employment agreement. Each employment agreement provides for annual base salaries, performance bonuses (as provided in the Management Incentive Plan (“MIP”) as approved by our Board, and other benefits commonly found in such agreements. In addition, each employment agreement provides that in the event the executive officer terminates his employment for “good reason” (as defined in the agreements) or is terminated by us without cause (including the executive officer terminating his employment for “good reason” or is terminated by us without cause within 24 months after a Change in Control (as defined in the agreement)), we will pay the executive officer the following: (a) a sum equal to any unpaid base salary; (b) accrued unused vacation time and any employee benefits accrued as of termination but not yet been paid (“Accrued Amounts”); (c) two years of full base salary; (d) performance compensation under the MIP earned with respect to the fiscal year immediately preceding the date of termination; and (e) an additional year of performance compensation as provided under the MIP earned, if not already paid, with respect to the fiscal year immediately preceding the date of termination. If the executive terminates his employment for a reason other than for good reason, we will pay to the executive the amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase our Common Stock held by the executive officer will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an executive officer, all outstanding stock options to purchase our Common Stock held by the executive officer will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the executive officer’s death. In the event of an executive officer terminating his employment for “good reason” or is terminated by us without cause, all outstanding stock options to purchase our Common Stock held by the executive officer will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the executive’s date of termination.

We had previously entered into an employment agreement with each of Dr. Louis Centofanti and Ben Naccarato on July 10, 2014 which both employment agreements were to expire on July 10, 2018, as amended (the “July 10, 2014 Employment Agreements”). We also had previously entered into an employment agreement dated January 19, 2017 (which was effective June 11, 2016) with Mark Duff which is due to expire on June 11, 2019 (the “January 19, 2017 Employment Agreement”). The July 10, 2014 Employment Agreements and the January 19, 2017 Employment Agreement were terminated effective September 8, 2017.

MIPs

On January 18, 2018, our Board and the Compensation and Stock Option Committee (the “Compensation Committee”) approved individual MIP for each Mark Duff, CEO and President, Ben Naccarato, CFO, and Dr. Louis Centofanti, EVP of Strategic Initiatives. The MIPs are effective January 1, 2018 and applicable for year ended December 31, 2018. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive’s 2018 annual base salary on the approval date of the MIP. The potential target performance compensation ranges from 5% to 100% (\$13,350 to \$267,000) of the base salary for the CEO and President; 5% to 100% (\$11,475 to \$229,494) of the base salary for the CFO; and 5% to 100% (\$11,170 to \$223,400) of the base salary for the EVP of Strategic Initiatives. Pursuant to the MIPs, the Compensation Committee has the right to modify, change or terminate the MIPs at any time and for any reason. No performance compensation was earned or payable under each of the 2018 MIPs as discussed above.

On January 17, 2019, our Board and the Compensation Committee approved individual MIP for the CEO, CFO, and EVP of Strategic Initiatives. Each MIP is effective January 1, 2019 and applicable for the year ended December 31, 2019. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive's annual 2019 base salary on the approval date of the MIP. The potential target performance compensation ranges from 5% to 150% of the 2019 base salary for the CEO (\$14,350 to \$430,500), 5% to 100% of the 2019 base salary for the CFO (\$11,762 to \$235,231), and 5% to 100% of the 2019 base salary for the EVP of Strategic Initiatives (\$11,449 to \$228,985).

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required under Regulation S-K for smaller reporting companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Forward-looking Statements

Certain statements contained within this report may be deemed "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the "Private Securities Litigation Reform Act of 1995"). All statements in this report other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors, which could cause actual results and performance of the Company to differ materially from such statements. The words "believe," "expect," "anticipate," "intend," "will," and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things,

- demand for our services;
- continue to focus on expansion into both commercial and international markets to increase revenues;
- closure of M&EC facility;
- improvement to working capital;
- reductions in the level of government funding in future years;
- R&D activity of our Medical Segment;
- reducing operating costs;
- expect to meet our financial covenant requirements in the next twelve months;
- cash flow requirements;
- government funding for our services;
- may not have liquidity to repay debt if our lender accelerates payment of our borrowings;

Explanation of Responses:

our cash flows from operations, our available liquidity from our credit facility, loan proceeds of \$2,500,000, and finite sinking funds that we expect to receive are sufficient to service our operations;
release of restricted finite risk sinking funds;
manner in which the government will be required to spend funding to remediate federal sites;
audit by the Internal Revenue Services of our net operating losses;

funding operations;
fund capital expenditures from cash from operations and/or financing;
fund remediation expenditures for sites from funds generated internally;
compliance with environmental regulations;
future environmental policies affecting operations;
potential effect of being a PRP;
subject to fines and civil penalties in connection with violations of regulatory requirements;
large business are more willing to team with small businesses;
permit and license requirements represent a potential barrier to entry for possible competitors;
process backlog during periods of low waste receipts, which historically has been in the first and fourth quarters;
potential sites for violations of environmental laws and remediation of our facilities;
delay in waste shipment should have positive effect for us in first half of 2019;
continuation of contracts with federal government;
loss of contracts;
necessary capital for Medical Segment;
disposal of our waste;
exposure to one-time transition tax; and
contract awards and estimated value of these contracts.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to be correct. There are a variety of factors, which could cause future outcomes to differ materially from those described in this report, including, but not limited to:

general economic conditions;
material reduction in revenues;
ability to meet PNC covenant requirements;
inability to collect in a timely manner a material amount of receivables;
increased competitive pressures;
inability to maintain and obtain required permits and approvals to conduct operations;
public not accepting our new technology;
inability to develop new and existing technologies in the conduct of operations;
inability to maintain and obtain closure and operating insurance requirements;
inability to retain or renew certain required permits;
discovery of additional contamination or expanded contamination at any of the sites or facilities leased or owned by us or our subsidiaries which would result in a material increase in remediation expenditures;
delays at our third party disposal site can extend collection of our receivables greater than twelve months;
refusal of third party disposal sites to accept our waste;
changes in federal, state and local laws and regulations, especially environmental laws and regulations, or in interpretation of such;
requirements to obtain permits for TSD activities or licensing requirements to handle low level radioactive materials are limited or lessened;
potential increases in equipment, maintenance, operating or labor costs;
management retention and development;
financial valuation of intangible assets is substantially more/less than expected;
the requirement to use internally generated funds for purposes not presently anticipated;

inability to continue to be profitable on an annualized basis;
inability of the Company to maintain the listing of its Common Stock on the NASDAQ;
terminations of contracts with federal agencies or subcontracts involving federal agencies, or reduction in amount of waste delivered to the Company under the contracts or subcontracts;
renegotiation of contracts involving the federal government;
federal government's inability or failure to provide necessary funding to remediate contaminated federal sites;
disposal expense accrual could prove to be inadequate in the event the waste requires re-treatment;
inability to raise capital on commercially reasonable terms;
inability to increase profitable revenue;
lender refuses to waive non-compliance or revise our covenant so that we are in compliance; and
risk factors contained in Item 1A of this report.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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<u>Consolidated Statements of Stockholders' Equity for the years ended December 31, 2018 and 2017</u>	43
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Financial Statement Schedules

In accordance with the rules of Regulation S-X, schedules are not submitted because they are not applicable to or required by the Company.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders

Perma-Fix Environmental Services, Inc.

We have audited the accompanying consolidated balance sheets of Perma-Fix Environmental Services, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive loss, stockholders’ equity, and cash flows for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Explanation of Responses:

/s/ GRANT THORNTON LLP

We have served as the Company's auditor since 2014.

Atlanta, Georgia

April 1, 2019

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED BALANCE SHEETS***As of December 31,*

(Amounts in Thousands, Except for Share and Per Share Amounts)	2018	2017
ASSETS		
Current assets:		
Cash	\$810	\$1,063
Accounts receivable, net of allowance for doubtful accounts of \$105 and \$720, respectively	7,735	7,940
Unbilled receivables - current	3,105	4,547
Inventories	449	393
Prepaid and other assets	2,552	3,281
Current assets related to discontinued operations	107	89
Total current assets	14,758	17,313
Property and equipment:		
Buildings and land	19,782	23,806
Equipment	19,157	33,182
Vehicles	369	393
Leasehold improvements	23	11,549
Office furniture and equipment	1,551	1,670
Construction-in-progress	1,389	653
Total property and equipment	42,271	71,253
Less accumulated depreciation	(26,532)	(56,383)
Net property and equipment	15,739	14,870
Property and equipment related to discontinued operations	81	81
Intangibles and other long term assets:		
Permits	8,443	8,419
Other intangible assets - net	1,278	1,487
Unbilled receivables - non-current	—	184
Finite risk sinking fund (restricted cash)	15,971	15,676
Other assets	1,054	1,313
Other assets related to discontinued operations	118	195
Total assets	\$57,442	\$59,538

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED BALANCE SHEETS, CONTINUED***As of December 31,*

(Amounts in Thousands, Except for Share and per Share Amounts)	2018	2017
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$5,497	\$3,537
Accrued expenses	5,014	4,782
Disposal/transportation accrual	1,542	2,071
Deferred revenue	6,595	4,311
Accrued closure costs - current	1,142	2,791
Current portion of long-term debt	1,184	1,184
Current portion of capital lease obligations	181	—
Current liabilities related to discontinued operations	356	905
Total current liabilities	21,511	19,581
Accrued closure costs	5,608	5,604
Other long-term liabilities	255	1,191
Deferred tax liabilities	586	1,694
Long-term debt, less current portion	2,118	2,663
Long-term capital lease obligations, less current portion	268	—
Long-term liabilities related to discontinued operations	963	359
Total long-term liabilities	9,798	11,511
Total liabilities	31,309	31,092
Commitments and Contingencies (Note 15)		
Series B Preferred Stock of subsidiary, \$0 par value; 1,467,396 shares authorized; 0 and 1,284,730 shares issued, respectively; 0 and 1,284,730 shares outstanding, respectively; liquidation value of \$1.00 per share plus accrued and unpaid dividends of \$0 and \$995, respectively (Note 8)	—	1,285
Stockholders' Equity:		
Preferred Stock, \$.001 par value; 2,000,000 shares authorized, no shares issued and outstanding	—	—
Common Stock, \$.001 par value; 30,000,000 shares authorized; 11,944,215 and 11,738,623 shares issued, respectively; 11,936,573 and 11,730,981 shares outstanding, respectively	12	12
Additional paid-in capital	107,548	106,417
Accumulated deficit	(79,630)	(77,893)
Accumulated other comprehensive loss	(214)	(112)

Explanation of Responses:

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Less Common Stock in treasury, at cost; 7,642 shares	(88)	(88)
Total Perma-Fix Environmental Services, Inc. stockholders' equity	27,628	28,336
Non-controlling interest	(1,495)	(1,175)
Total stockholders' equity	26,133	27,161
Total liabilities and stockholders' equity	\$57,442	\$59,538

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

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED STATEMENTS OF OPERATIONS***For the years ended December 31,*

(Amounts in Thousands, Except for Per Share Amounts)	2018	2017
Net revenues	\$49,539	\$49,769
Cost of goods sold	41,078	41,149
Gross profit	8,461	8,620
Selling, general and administrative expenses	10,741	11,101
Research and development	1,370	1,595
Gain on disposal of property and equipment	(46)	(12)
Impairment loss on tangible assets	—	672
Loss from operations	(3,604)	(4,736)
Other income (expense):		
Interest income	295	140
Interest expense	(251)	(315)
Interest expense-financing fees	(38)	(35)
Other	(8)	123
Net gain on exchange offer of Series B Preferred Stock of subsidiary (Note 8)	1,596	—
Loss from continuing operations before taxes	(2,010)	(4,823)
Income tax benefit	(936)	(1,285)
Loss from continuing operations, net of taxes	(1,074)	(3,538)
Loss from discontinued operations, net of taxes of \$0	(667)	(592)
Net loss	(1,741)	(4,130)
Net loss attributable to non-controlling interest	(320)	(450)
Net loss attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(1,421)	\$(3,680)
Net loss per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - basic and diluted:		
Continuing operations	\$(.06)	\$(.26)
Discontinued operations	(.06)	(.05)
Net loss per common share	\$(.12)	\$(.31)
Number of common shares used in computing net loss per share:		
Basic	11,855	11,706
Diluted	11,855	11,706

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

For the years ended December 31,

(Amounts in Thousands)	2018	2017
Net loss	\$(1,741)	\$(4,130)
Other comprehensive (loss) income:		
Foreign currency translation adjustments	(102)	50
Total other comprehensive (loss) income	(102)	50
Comprehensive loss	(1,843)	(4,080)
Comprehensive loss attributable to non-controlling interest	(320)	(450)
Comprehensive loss attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(1,523)	\$(3,630)

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the years ended December 31,

(Amounts in Thousands, Except for Share Amounts)

	Common Stock	Additional Paid-In Capital	Common Stock Held In Treasury	Accumulated Other Comprehensive Loss	Non-controlling Interest in Subsidiary	Accumulated Deficit	Total Stockholders' Equity	
	Shares	Amount						
Balance at December 31, 2016	11,677,025	\$ 11	\$ 106,048	\$ (88)	\$ (162)	\$ (725)	\$ (74,213)	\$ 30,871
Net loss	—	\$ —	\$ —	\$ —	\$ —	\$ (450)	\$ (3,680)	\$ (4,130)
Foreign currency translation	—	—	—	50	—	—	—	50
Issuance of Common Stock for services	61,598	1	225	—	—	—	—	226
Stock-Based Compensation	—	—	144	—	—	—	—	144
Balance at December 31, 2017	11,738,623	\$ 12	\$ 106,417	\$ (88)	\$ (112)	\$ (1,175)	\$ (77,893)	\$ 27,161
Adoption of accounting standards updates (Note 2)	—	—	—	—	—	—	(316)	(316)
Net loss	—	—	—	—	—	(320)	(1,421)	(1,741)
Foreign currency translation adjustment	—	—	—	(102)	—	—	—	(102)
Issuance of Common Stock upon exercise of options	10,000	—	36	—	—	—	—	36
Issuance of Common Stock from exchange offer of Series B Preferred Stock of subsidiary (Note 8)	134,994	—	648	—	—	—	—	648
Issuance of Common Stock for services	60,598	—	249	—	—	—	—	249
Stock-Based Compensation	—	—	198	—	—	—	—	198
	11,944,215	\$ 12	\$ 107,548	\$ (88)	\$ (214)	\$ (1,495)	\$ (79,630)	\$ 26,133

Explanation of Responses:

**Balance at December
31, 2018**

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

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PERMA-FIX ENVIRONMENTAL SERVICES, INC.**CONSOLIDATED STATEMENTS OF CASH FLOWS***For the years ended December 31,*

(Amounts in Thousands)	2018	2017
Cash flows from operating activities:		
Net loss	\$(1,741)	\$(4,130)
Less: loss on discontinued operations, net of taxes of \$0 (Note 9)	(667)	(592)
Loss from continuing operations	(1,074)	(3,538)
Adjustments to reconcile net loss from continuing operations to cash provided by operating activities:		
Depreciation and amortization	1,455	3,803
Amortization of debt issuance costs	35	36
Deferred tax benefit	(1,108)	(668)
Provision for bad debt reserves	66	462
Gain on disposal of property and equipment	(46)	(12)
Gain on exchange offer of Series B Preferred Stock of subsidiary (Note 8)	(1,659)	
Impairment loss on tangible assets		672
Issuance of common stock for services	249	225
Stock-based compensation	198	144
Changes in operating assets and liabilities of continuing operations:		
Accounts receivable	139	515
Unbilled receivables	1,626	(1,589)
Prepaid expenses, inventories and other assets	1,932	(54)
Accounts payable, accrued expenses and unearned revenue	765	1,093
Cash provided by continuing operations	2,578	1,089
Cash used in discontinued operations	(618)	(647)
Cash provided by operating activities	1,960	442
Cash flows from investing activities:		
Purchases of property and equipment	(1,432)	(439)
Proceeds from sale of property and equipment	47	30
Cash used in investing activities of continuing operations	(1,385)	(409)
Cash provided by investing activities of discontinued operations	67	69
Cash used in investing activities	(1,318)	(340)
Cash flows from financing activities:		
Borrowing on revolving credit	54,714	45,163
Repayments of revolving credit borrowings	(54,075)	(48,966)
Principal repayments of long term debt	(1,219)	(1,219)
Principal payment on capital leases	(36)	
Proceeds from issuance of common stock upon exercise of options	36	
Cash used in financing activities of continuing operations	(580)	(5,022)

Explanation of Responses:

Effect of exchange rate changes on cash	(20)	9
Increase (decrease) in cash and finite risk sinking fund (restricted cash) (Note 2)	42		(4,911)
Cash and finite risk sinking fund (restricted cash) at beginning of period (Note 2)	16,739		21,650
Cash and finite risk sinking fund (restricted cash) at end of period (Note 2)	\$16,781		\$16,739
Supplemental disclosure:			
Interest paid	\$248		\$318
Income taxes paid	160		58
Non-cash investing and financing activities:			
Equipment purchase subject to capital lease	545		196
Common stock issued in exchange offer of Series B Preferred Stock of subsidiary (Note 8)	648		

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

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

Notes to Consolidated Financial Statements

December 31, 2018 and 2017

NOTE 1

DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), an environmental and technology know-how company, is a Delaware corporation, engaged through its subsidiaries, in three reportable segments:

TREATMENT SEGMENT, which includes:

- nuclear, low-level radioactive, mixed waste (containing both hazardous and low-level radioactive constituents),
- hazardous and non-hazardous waste treatment, processing and disposal services primarily through three uniquely licensed and permitted treatment and storage facilities; and
- R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

SERVICES SEGMENT, which includes:

- Technical services, which include:

- professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
- integrated Occupational Safety and Health services including IH assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and OSHA citation assistance;
- global technical services providing consulting, engineering, project management, waste management, environmental, and decontamination and decommissioning field, technical, and management personnel and services to commercial and government customers; and
- on-site waste management services to commercial and governmental customers.

-Nuclear services, which include:

technology-based services including engineering, decontamination and decommissioning (“D&D”), specialty services and construction, logistics, transportation, processing and disposal; remediation of nuclear licensed and federal facilities and the remediation cleanup of nuclear legacy sites. Such services capability includes: project investigation; radiological engineering; partial and total plant D&D; facility decontamination, dismantling, demolition, and planning; site restoration; logistics; transportation; and emergency response; and

- A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) health physics, IH and customized NIOSH instrumentation.

-A company owned gamma spectroscopy laboratory for the analysis of oil and gas industry solids and liquids.

MEDICAL SEGMENT, which includes: R&D of the Company’s medical isotope production technology by our majority-owned Polish subsidiary, Perma-Fix Medical S.A. and its wholly-owned subsidiary Perma-Fix Medical Corporation (“PFM Corporation”) (together known as “PF Medical” or the Medical Segment). The Company’s Medical Segment has not generated any revenue as it remains in the R&D stage and has substantially reduced its R&D activities due to the need for capital to fund these activities. All costs incurred by the Medical Segment are reflected within R&D in the accompanying consolidated financial statements (see “Financial Position and Liquidity” below for further discussion of Medical Segment’s significant curtailment of its R&D activities).

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The Company's continuing operations consist of Diversified Scientific Services, Inc. ("DSSI"), Perma-Fix of Florida, Inc. ("PFF"), Perma-Fix of Northwest Richland, Inc. ("PFNWR"), East Tennessee Materials & Energy Corporation ("M&EC") (see "Note 4 – M&EC Facility" regarding the closure of this facility), Safety & Ecology Corporation ("SEC"), Perma-Fix Environmental Services UK Limited ("PF UK Limited"), Perma-Fix of Canada, Inc. ("PF Canada"), and PF Medical.

The Company's discontinued operations (see Note 9) consist of all our subsidiaries included in our Industrial Segment which were divested in 2011 and prior, previously closed locations, and our Perma-Fix of South Georgia, Inc. ("PFSG") facility which is non-operational and is in closure status.

Financial Position and Liquidity

The Company's cash flow requirements during 2018 were primarily financed by our operations and credit facility availability. We generated positive cash flow from our operations of approximately \$1,960,000, which included cash outlays of approximately \$5,400,000 for operating and closure spending for our M&EC facility, which is in closure status.

The Company's cash flow requirements for 2019 and into the first quarter of 2020 will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, planned capital expenditures and remaining closure spending requirements in connection with the closure of our M&EC facility (see "Note 4 – M&EC Facility" for further discussion of the M&EC facility closure) which we plan to fund from operations, credit facility availability, and proceeds of approximately \$2,500,000 that the Company received pursuant to the terms of a loan and securities purchase agreement and promissory note that the Company consummated on April 1, 2019 (see "Note 19 – Subsequent Event" for further information of this loan). Additionally, as a result of the M&EC facility closure, the Company expects to receive, by the end of the second quarter of 2019, a release of approximately \$5,000,000 of the \$15,971,000 restricted finite risk sinking funds held by American International Group ("AIG") as collateral under the financial assurance policy dated June 2003 that we currently have with AIG. The release of this finite risk sinking fund is subject to approval from AIG and the appropriate regulators and when released, will further enhance our liquidity and working capital deficit (see "Note 15 – Commitment and Contingencies – Insurance" for further information of this policy with AIG). The Company continues to explore all sources of increasing revenue. The Company is continually reviewing operating costs and is committed to further reducing operating costs to bring them in line with revenue levels, when necessary.

As previously disclosed, the Company's Medical Segment reduced its R&D activities substantially due to the need for capital to fund such activities. Our Medical Segment continues to seek various sources in order to raise this funding or partners willing to provide the funding for its R&D activities. The Company anticipates that the Medical Segment will not resume full R&D activities until the necessary capital is obtained through its own credit facility or additional equity raise or obtains partners willing to provide funding for its R&D activities. If the Medical Segment is unable to

raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

NOTE 2

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

Our consolidated financial statements include our accounts, those of our wholly-owned subsidiaries, and our majority-owned Polish subsidiary, PF Medical, after elimination of all significant intercompany accounts and transactions.

Use of Estimates

The Company prepares financial statements in conformity with accounting standards generally accepted in the United States of America ("US GAAP"), which may require estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. See Notes 9, 13, 14 and 15 for estimates of discontinued operations and environmental liabilities, closure costs, income taxes and contingencies for details on significant estimates.

Cash and Finite Risk Sinking Fund (Restricted Cash)

At December 31, 2018, the Company had cash on hand of approximately \$810,000, which reflects primarily account balances of our foreign subsidiaries totaling approximately \$806,000. At December 31, 2017, the Company had cash on hand of approximately \$1,063,000, which included account balances for our foreign subsidiaries totaling approximately \$305,000. At December 31, 2018 and 2017, the Company has finite risk sinking funds of approximately \$15,971,000 and \$15,676,000, respectively, which represents cash held as collateral under the Company's financial assurance policy (see "Note 15 – Commitment and Contingencies – Insurance" for a discussion of this fund).

Accounts Receivable

Accounts receivable are customer obligations due under normal trade terms requiring payment within 30 or 60 days from the invoice date based on the customer type (government, broker, or commercial). The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that will not be collected. The Company regularly reviews all accounts receivable balances that exceed 60 days from the invoice date and based on an assessment of current credit worthiness, estimates the portion, if any, of the balance that will not be collected. This analysis excludes government related receivables due to our past successful experience in their collectability. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category, based on historical experience that allows us to calculate the total allowance required. Once the Company has exhausted all options in the collection of a delinquent accounts receivable balance, which includes collection letters, demands for payment, collection agencies and attorneys, the account is deemed uncollectible and subsequently written off. The write off process involves approvals from senior management based on required approval thresholds.

The following table sets forth the activity in the allowance for doubtful accounts for the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Allowance for doubtful accounts - beginning of year	\$720	\$272
Provision for bad debt reserve	66	462
Write-off	(681)	(14)
Allowance for doubtful accounts - end of year	\$105	\$720

Unbilled Receivables

Unbilled receivables are generated by differences between invoicing timing and our proportional performance based methodology used for revenue recognition purposes. As major processing and contract completion phases are completed and the costs are incurred, the Company recognizes the corresponding percentage of revenue. Within our Treatment Segment, the facilities experience delays in processing invoices due to the complexity of the documentation that is required for invoicing, as well as the difference between completion of revenue recognition milestones and agreed upon invoicing terms, which results in unbilled receivables. The timing differences occur for several reasons: partially from delays in the final processing of all wastes associated with certain work orders and partially from delays for analytical testing that is required after the facilities have processed waste but prior to our release of waste for disposal. The tasks relating to these delays usually take several months to complete. Based on historical data used in reviewing the timing of these delays, the Company determined that certain issues, including, but not limited to, delays at our third party disposal site, can extend collection of some of these receivables greater than twelve months. However, our historical experience suggests that a significant portion of unbilled receivables are ultimately collectible with minimal concession on our part. The Company, therefore, segregates the unbilled receivables between current and long-term.

Unbilled receivables within our Services Segment can result from: (1) revenue recognized by our Earned Value Management program (a program which integrates project scope, schedule, and cost to provide an objective measure of project progress) but invoice milestones have not yet been met and/or (2) contract claims and pending change orders, including Requests for Equitable Adjustments (“REAs”) when work has been performed and collection of revenue is reasonably assured.

Inventories

Inventories consist of treatment chemicals, saleable used oils, and certain supplies. Additionally, the Company has replacement parts in inventory, which are deemed critical to the operating equipment and may also have extended lead times should the part fail and need to be replaced. Inventories are valued at the lower of cost or market with cost determined by the first-in, first-out method.

Property and Equipment

Property and equipment expenditures are capitalized and depreciated using the straight-line method over the estimated useful lives of the assets for financial statement purposes, while accelerated depreciation methods are principally used for income tax purposes. Generally, asset lives range from ten to forty years for buildings (including improvements and asset retirement costs) and three to seven years for office furniture and equipment, vehicles, and decontamination and processing equipment. Leasehold improvements are capitalized and amortized over the lesser of the term of the lease or the life of the asset. Maintenance and repairs are charged directly to expense as incurred. The cost and accumulated depreciation of assets sold or retired are removed from the respective accounts, and any gain or loss from sale or retirement is recognized in the accompanying Consolidated Statements of Operations. Renewals and improvements, which extend the useful lives of the assets, are capitalized.

Certain property and equipment expenditures are financed through the use of capital leases. Amortization of capitalized leased assets is computed using the straight-line method over the estimated useful lives of the assets. Total property and equipment at December 31, 2018 financed through capital leases was approximately \$517,000 less accumulated depreciation of \$8,000 resulting in net fixed assets under capital leases of \$509,000. The Company had no capital leases in 2017.

Long-lived assets, such as property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of are separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated.

Our depreciation expense totaled approximately \$1,105,000 and \$3,429,000 in 2018 and 2017, respectively.

Capitalized Interest

The Company's policy is to capitalize interest cost incurred on debt during the construction of projects for its use. A reconciliation of our total interest cost to "Interest Expense" as reported on our Consolidated Statements of Operations for 2018 and 2017 is as follows:

(Amounts in Thousands)	2018	2017
Interest cost capitalized	\$70	\$6
Interest cost charged to income	251	315
Total interest	\$321	\$321

Intangible Assets

Intangible assets consist primarily of the recognized value of the permits required to operate our business.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, a quantitative test is performed to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long term discount rates. Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2018 and 2017 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. The Company has one definite-lived permit which was excluded from our annual impairment review as noted above. Definite-lived intangible assets are also tested for impairment whenever events or changes in circumstances suggest impairment might exist.

R&D

Operational innovation and technical know-how is very important to the success of our business. Our goal is to discover, develop, and bring to market innovative ways to process waste that address unmet environmental needs and to develop new company service offerings. The Company conducts research internally and also through collaborations with other third parties. R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development and enhancement of new potential waste treatment processes and new technology and are charged to expense when incurred in accordance with ASC Topic 730, "Research and Development." The Company's R&D expenses included approximately \$811,000 and \$1,141,000 for the years ended December 31, 2018 and 2017, respectively, incurred by our Medical Segment in the R&D of its medical isotope production technology.

Accrued Closure Costs and Asset Retirement Obligations ("ARO")

Accrued closure costs represent our estimated environmental liability to clean up our facilities, as required by our permits, in the event of closure. ASC 410, "Asset Retirement and Environmental Obligations" requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO's are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, the Company must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Increases in the ARO liability due to passage of time impact net income as accretion expense, which is included in cost of goods sold. Changes in costs resulting from changes or expansion at the facilities require adjustment to the ARO liability and are capitalized and charged as depreciation expense, in accordance with the Company's depreciation policy.

Income Taxes

Income taxes are accounted for in accordance with ASC 740, "Income Taxes." Under ASC 740, the provision for income taxes is comprised of taxes that are currently payable and deferred taxes that relate to the temporary differences between financial reporting carrying values and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Any effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

ASC 740 requires that deferred income tax assets be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred income tax assets will not be realized. The Company regularly assesses the likelihood that the deferred tax asset will be recovered from future taxable income. The Company considers projected future taxable income and ongoing tax planning strategies, then records a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized.

ASC 740 sets out a consistent framework for preparers to use to determine the appropriate recognition and measurement of uncertain tax positions. ASC 740 uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit which is greater than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company recognizes accrued interest and income tax penalties related to unrecognized tax benefits as a component of income tax expense.

The Company reassesses the validity of our conclusions regarding uncertain income tax positions on a quarterly basis to determine if facts or circumstances have arisen that might cause us to change our judgment regarding the likelihood of a tax position's sustainability under audit.

Foreign Currency

The Company's foreign subsidiaries include PF UK Limited, PF Canada and PF Medical. Assets and liabilities are translated to U.S. dollars at the exchange rate in effect at the balance sheet date and revenue and expenses at the average exchange rate for the period. Foreign currency translation adjustments for these subsidiaries are accumulated as a separate component of accumulated other comprehensive income (loss) in stockholders' equity. Gains and losses resulting from foreign currency transactions are recognized in the Consolidated Statements of Operations.

Concentration Risk

The Company performed services relating to waste generated by domestic government clients (includes U.S federal, state and local), either directly as a prime contractor or indirectly as a subcontractor to government entities, representing approximately \$34,811,000, or 70.3%, of our total revenue during 2018, as compared to \$37,019,000, or 74.4%, of our total revenue during 2017.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, the Company does not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and accounts receivable. The Company maintains cash with high quality financial institutions, which may exceed Federal Deposit Insurance Corporation ("FDIC") insured amounts from time to time. Concentration

of credit risk with respect to accounts receivable is limited due to the Company's large number of customers and their dispersion throughout the United States as well as with the significant amount of work that we perform for the federal government.

The Company had two government related customers whose net outstanding receivable balance represented 13.0% and 10.1% of the Company's total consolidated net accounts receivable at December 31, 2018. The Company had two government related customers whose net outstanding receivable balance represented 17.9% and 16.8% of the Company's total consolidated net accounts receivable at December 31, 2017.

Revenue Recognition and Related Policies

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue from Contracts with Customers" followed by a series of related accounting standard updates (collectively referred to as "Topic 606") which superseded nearly all existing revenue recognition guidance. Under the new standard, a five-step process is utilized in order to determine revenue recognition, depicting the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. We adopted Topic 606 effective January 1, 2018 (see "Recently Adopted Accounting Standards" below for further discussion of Topic 606 and the impact to the Company's financial statements). Under Topic 606, a performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract transaction price is allocated to each distinct performance obligation and recognized as revenues as the performance obligation is satisfied.

Treatment Segment Revenues:

Contracts in our Treatment Segment have a single performance obligation as the promise to receive, treat and dispose of waste is not separately identifiable in the contract and, therefore, not distinct. Performance obligations are generally satisfied over time using the input method. Under the input method, the Company uses a measure of progress divided into major phases which include receipt (generally ranging from 9.0% to 33%), treatment/processing and shipment/final disposal. As major processing phases are completed and the costs are incurred, the proportional percentage of revenue is recognized. Transaction price for Treatment Segment contracts are determined by the stated fixed rate per unit price as stipulated in the contract.

Services Segment Revenues:

Revenues for our Services Segment are generated from time and materials, cost reimbursement or fixed price arrangements:

Our primary obligation to customers in time and materials contracts relate to the provision of services to the customer at the direction of the customer. This provision of services at the request of the customer is the performance obligation, which is satisfied over time. Revenue earned from time and materials contracts is determined using the input method and is based on contractually defined billing rates applied to services performed and materials delivered.

Our primary performance obligation to customers in cost reimbursement contracts is to complete certain tasks and work streams. Each specified work stream or task within the contract is considered to be a separate performance obligation. The transaction price is calculated using an estimated cost to complete the various scope items to achieve the performance obligation as stipulated in the contract. An estimate is prepared for each individual scope item in the contract and the transaction price is allocated on a time and materials basis as services are provided. Revenue from cost reimbursement contracts is recognized over time using the input method based on costs incurred, plus a proportionate amount of fee earned.

Under fixed price contracts, the objective of the project is not attained unless all scope items within the contract are completed and all of the services promised within fixed fee contracts constitute a single performance obligation. Transaction price is estimated based upon the estimated cost to complete the overall project. Revenue from fixed price contracts is recognized over time using the output or input method. For the output method, revenue is recognized based on milestone attained on the project. For the input method, revenue is recognized based on costs incurred on the project relative to the total estimated costs of the project.

The majority of our revenue is derived from short term contracts with an original expected length of one year or less. Also, the nature of our contracts does not give rise to variable consideration.

Significant Payment Terms

Invoicing is based on schedules established in customer contracts. Payment terms vary by customers but are generally established at 30 days from invoicing.

Incremental Costs to Obtain a Contract

Costs incurred to obtain contracts with our customers are immaterial and as a result, the Company expenses (within selling, general and administration expenses (“SG&A”)) incremental costs incurred in obtaining contracts with our customer as incurred.

Remaining Performance Obligations

The Company applies the practical expedient in paragraph 606-10-50-14 and does not disclose information about remaining performance obligations that have original expected durations of one year or less.

The Company applies the transition practical expedient in paragraph 606-10-65-1(f)(3) and does not disclose the amount of the transaction price allocated to the remaining performance obligations or an explanation of when the Company expects to recognize that amount as revenue for periods prior to the adoption of Topic 606.

Stock-Based Compensation

The Company accounts for stock-based compensation in accordance with ASC 718, “Compensation – Stock Compensation.” ASC 718 requires all stock-based payments to employees, including grant of options, to be recognized in the Statement of Operations based on their fair values. The Company accounts for stock-based compensation issued to consultants in accordance with the provisions of ASC 505-50, “Equity-Based Payments to Non-Employees (see “Recently Issued Accounting Standards – Not Yet Adopted – ASU No 2018-07, Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting” which the Company will adopt effective January 1, 2019. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock-based awards include the exercise price of the award, the expected term, the expected volatility of our stock over the stock-based award’s expected term, the risk-free interest rate over the award’s expected term, and the expected annual dividend yield. The Company accounts for forfeitures when they occur.

Comprehensive Income (Loss)

The components of comprehensive income (loss) are net income (loss) and the effects of foreign currency translation adjustments.

Income (Loss) Per Share

Basic income (loss) per share is calculated based on the weighted-average number of outstanding common shares during the applicable period. Diluted income (loss) per share is based on the weighted-average number of outstanding common shares plus the weighted-average number of potential outstanding common shares. In periods where they are anti-dilutive, such amounts are excluded from the calculations of dilutive earnings per share. Income (loss) per share is computed separately for each period presented.

Fair Value of Financial Instruments

Certain assets and liabilities are required to be recorded at fair value on a recurring basis, while other assets and liabilities are recorded at fair value on a nonrecurring basis. Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The three-tier value hierarchy, which prioritizes the inputs used in the valuation methodologies, is:

Explanation of Responses:

Level 1—Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2—Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3—Valuations based on unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants.

Financial instruments include cash (Level 1), accounts receivable, accounts payable, and debt obligations (Level 3). Credit is extended to customers based on an evaluation of a customer's financial condition and, generally, collateral is not required. At December 31, 2018 and December 31, 2017, the fair value of the Company's financial instruments approximated their carrying values. The fair value of the Company's revolving credit and term loan approximate its carrying value due to the variable interest rate.

Recently Adopted Accounting Standards

The Company adopted Topic 606 effective January 1, 2018. Topic 606 provides a single, comprehensive revenue recognition model for all contracts with customers and also requires additional disclosure surrounding the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The Company adopted Topic 606 under the modified retrospective approach to all contracts as of the date of adoption. The Company recognized the cumulative effect of initially adopting Topic 606 as an increase of approximately \$316,000 to the opening balance of accumulated deficit at January 1, 2018. The adoption of Topic 606 did not result in significant changes to our revenues within our Treatment and Services Segments. The cumulative impact to the opening balance of accumulated deficit at January 1, 2018 was primarily driven by changes to the timing of revenue recognition in certain immaterial waste streams within our Treatment Segment. See "Revenue Recognition and Related Policies" above in this Note and "Note 3 – Revenue" for additional disclosures related to our revenues under the new standard. The comparative previous period information continues to be reported under the accounting standards in effect for that period. We expect the impact of the adoption of Topic 606 to be immaterial to our consolidated financial statements on an on-going basis.

The cumulative effect of the changes made to our January 1, 2018 unaudited Consolidated Balance Sheet for the adoption of Topic 606 was as follows (in thousands):

	Balance at December 31, 2017	Adjustment Due to Topic 606	Opening balance at January 1, 2018
LIABILITIES AND STOCKHOLDERS' EQUITY			
Current liabilities:			
Disposal/transportation accrual	\$ 2,071	\$ (456)	\$ 1,615
Deferred revenue	4,311	772	5,083
Stockholders' Equity:			
Accumulated deficit	\$ (77,893)	\$ (316)	\$ (78,209)

In accordance with Topic 606 requirements, the disclosure of the impact of adoption of Topic 606 on our Consolidated Balance Sheets, Consolidated Statement of Operations, and Consolidated Statement of Comprehensive Loss was as follows (in thousands):

Consolidated Balance Sheet	December 31, 2018		
	As Reported	Balances Before Adoption of Topic 606	Effect of Change Higher/(Lower)
LIABILITIES AND STOCKHOLDERS' EQUITY			
Current liabilities:			
Disposal/transportation accrual	\$ 1,542	\$ 1,882	\$ (340)
Deferred revenue	6,595	6,007	588
Stockholders' Equity:			
Accumulated deficit	\$ (79,630)	\$ (79,795)	\$ 165

Consolidated Statement of Operations	For the year ended December 31, 2018
	Balances Before

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	As Reported	Adoption of Topic 606	Effect of Change Higher/(Lower)
Revenues	\$49,539	\$49,355	\$ 184
Cost of goods sold	41,078	41,059	19
Loss from continuing operations, net of taxes	(1,074)	(1,239)	165
Net loss attributable to Perma-Fix Services, Inc. common stockholders	(1,421)	(1,586)	165
Net loss attributable to Perma-Fix Environmental Services, Inc. common stockholders - basic and diluted:			
Continuing operations	\$(.06)	\$(.07)	\$.01
Net loss per common shares	\$(.12)	\$(.13)	\$.01

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Consolidated Statement of Comprehensive Loss	For the year ended December 31, 2018		
	As Reported	Balances Before Adoption of Topic 606	Effect of Change Higher/(Lower)
Net loss	\$(1,741)	\$ (1,906)	\$ 165
Comprehensive loss attributable to Perma-Fix Environmental Services, Inc. stockholders	(1,523)	(1,688)	165

In August 2016, the FASB issued ASU 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (a consensus of the Emerging Issues Task Force),” which aims to eliminate diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows under Topic 230, Statement of Cash Flows, and other Topics. Subsequently, in November 2016, the FASB issued ASU 2016-18, “Statement of Cash Flows (Topic 230), Restricted Cash, a consensus of the FASB Emerging Issues Task Force,” which clarifies the guidance on the cash flow classification and presentation of changes in restricted cash or restricted cash equivalents. Although ASU 2016-18 does not provide a definition of restricted cash or restricted cash equivalents, it states that amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flow. ASU 2016-15 and ASU 2016-18 are effective for annual reporting periods, and interim periods therein, beginning after December 15, 2017. The Company retrospectively adopted these ASUs effectively January 1, 2018 and has included finite risk sinking funds (included in other long term assets of the Company’s Consolidated Balance Sheets) of \$15,971,000 and \$15,676,000 at December 31, 2018 and 2017, respectively, as well as previously reported cash, when reconciling the beginning-of-period and end-of-period cash and restricted cash on the accompanying Company’s Consolidated Statements of Cash Flows. The Company’s finite risk sinking funds represent cash held as collateral under the Company’s financial assurance policy (see “Note 14 – Commitment and Contingencies – Insurance” for a discussion of the Company’s finite risk sinking funds). The adoption of these ASUs by the Company effective January 1, 2018 did not have a material impact on the Company’s financial position and results of operations.

In October 2016, the FASB issued ASU 2016-16, “Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory,” which eliminates the existing exception in U.S. GAAP prohibiting the recognition of the income tax consequences for intra-entity asset transfers. Under ASU 2016-16, entities are required to recognize the income tax consequences of intra-entity asset transfers other than inventory when the transfer occurs. ASU 2016-16 is effective on a modified retrospective basis for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted. The adoption of ASU 2016-16 by the Company effective January 1, 2018 did not have a material impact on the Company’s financial position, results of operations, or cash flows.

In January 2017, the FASB issued ASU No. 2017-01, “Business Combinations (Topic 805) – Clarifying the Definition of a Business.” ASU 2017-01 clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or

businesses. The definition of a business affects many areas of accounting including acquisition, disposals, goodwill and consolidation. This standard is effective for fiscal years beginning after December 15, 2017, including interim periods within that reporting period. The adoption of ASU 2017-01 by the Company effective January 1, 2018 did not have a material impact on the Company's financial position, results of operations, or cash flows.

In May 2017, the FASB issued ASU 2017-09, "Compensation – Stock Compensation (Topic 718): Scope of Modification Accounting." This ASU provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. ASU 2017-09 is effective for fiscal years beginning after December 15, 2017 and interim periods within those fiscal years, and early adoption is permitted, including in an interim period. ASU 2017-09 is to be applied on a prospective basis to an award modified on or after the adoption date. The adoption of ASU 2017-01 by the Company effective January 1, 2018 did not have a material impact on the Company's financial position, results of operations, or cash flows.

Recently Issued Accounting Standards – Not Yet Adopted

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842).” ASU 2016-02 requires lessees to recognize a lease liability and a right-of-use (“ROU”) asset for all leases, including operating leases, with a term greater than twelve months in their balance sheets. ASU 2016-02 is effective for annual and interim periods in fiscal years beginning after December 15, 2018, with early adoption permitted. In July 2018, the FASB issued ASU 2018-11, “Targeted Improvements,” which provided entities with an additional (and optional) transition method, allowing an entity to apply the new lease standard at the adoption date and to recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The Company will adopt ASC Topic 842 on January 1, 2019 using the modified retrospective transition method allowed under ASU 2018-11. The Company will elect the package of practical expedients permitted under ASU 2018-11 which among other things, allows an entity to carry forward its historical lease classifications. Based on our current assessment, which is subject to change, the Company estimates it will recognize both ROU assets and related liabilities on its Consolidated Balance Sheets in the range of \$2,500,000 to \$2,700,000, upon adoption. The Company continues to evaluate implementation of key systems functionality and internal control processes in order to comply with ASC Topic 842. The Company does not expect the adoption of this standard to have a material impact in its Consolidated Statements of Operations and Cash Flows. The Company will expand its consolidated financial statement disclosure upon adoption of this standard.

In February 2018, FASB issued ASU 2018-02, “Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” This ASU allows for the reclassification of certain income tax effects related to the new Tax Cuts and Jobs Act legislation between “Accumulated other comprehensive income” and “Retained earnings.” This ASU relates to the requirement that adjustments to deferred tax liabilities and assets related to a change in tax laws or rates be included in “Income from continuing operations”, even in situations where the related items were originally recognized in “Other comprehensive income” (rather than in “Income from continuing operations”). ASU 2018-02 is effective for all entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years, with early adoption permitted. Adoption of this ASU is to be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the tax laws or rates were recognized. This ASU is effective January 1, 2019 for the Company. The Company does not expect that the adoption of ASU 2018-09 will have a material impact on the Company’s financial statements.

In June 2018, the FASB issued ASU No. 2018-07, “Compensation — Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting,” which expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 specifies that Topic 718 applies to all share-based payment transactions in which the grantor acquires goods and services to be used or consumed in its own operations by issuing share-based payment awards. ASU 2018-07 also clarifies that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606. ASU 2018-07 is effective for annual reporting periods, and interim periods within those years, beginning after December 15, 2018, with early adoption permitted. This ASU is effective January 1, 2019 for the Company. The Company does not expect that the adoption of ASU 2018-09 will have a material impact on the Company’s financial statements.

In August 2018, the FASB issued ASU 2018-13, “Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement.” ASU 2018-13 improves the disclosure requirements on fair value measurements. ASU 2018-13 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early adoption is permitted for any removed or modified disclosures. The Company is currently assessing the impact that this standard will have on its financial statements.

NOTE 3**REVENUE****Disaggregation of Revenue**

In general, the Company's business segmentation is aligned according to the nature and economic characteristics of our services and provides meaningful disaggregation of each business segment's results of operations. The following tables present further disaggregation of our revenues by different categories for our Services and Treatment Segments:

Revenue by Contract Type

(In thousands)	Twelve Months Ended			Twelve Months Ended		
	December 31, 2018			December 31, 2017		
	Treatment	Services	Total	Treatment	Services	Total
Fixed price	\$36,271	\$1,575	\$37,846	\$37,750	\$714	\$38,464
Time and materials		11,693	11,693		11,305	11,305
Total	\$36,271	\$13,268	\$49,539	\$37,750	\$12,019	\$49,769

Revenue by generator

(In thousands)	Twelve Months Ended			Twelve Months Ended		
	December 31, 2018			December 31, 2017		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	\$25,181	\$9,630	\$34,811	\$27,956	\$9,063	\$37,019
Domestic commercial	10,970	2,521	13,491	9,794	1,800	11,594
Foreign government	114	1,019	1,133		1,073	1,073
Foreign commercial	6	98	104		83	83
Total	\$36,271	\$13,268	\$49,539	\$37,750	\$12,019	\$49,769

Contract Balances

The timing of revenue recognition, billings, and cash collections results in accounts receivable and unbilled receivables (contract assets). The Company's contract liabilities consist of deferred revenues which represents advance payment from customers in advance of the completion of our performance obligation.

The following table represents changes in our contract assets and contract liabilities balances:

Explanation of Responses:

(In thousands)	December 31, 2018	January 1, 2018	Year-to-date Change (\$)	Year-to-date Change (%)
Contract assets				
Account receivables, net of allowance	\$ 7,735	\$ 7,940	\$ (205)	(2.6)%
Unbilled receivables - current	3,105	4,547	(1,442)	(31.7)%
Unbilled receivables - non-current		184	(184)	(100.0)%
Contract liabilities				
Deferred revenue	\$ 6,595	\$ 5,083	\$ 1,512	29.7 %

During the twelve months ended December 31, 2018 and 2017, the Company recognized revenue of \$8,071,000 and \$5,105,000, respectively, which was included in the deferred revenue balance at the beginning of the year. Revenue recognized in each period related to performance obligations satisfied within the respective period.

NOTE 4

M&EC FACILITY

The Company has completed the physical on-site closure and decommissioning activities at its M&EC facility (in closure status) in accordance with M&EC’s license and permit requirements, with final closure of the facility subject to completion of final surveys and regulatory approvals. The Company continues to transition operational capabilities to our other Treatment Segment facilities, subject to customer requirements and regulatory approvals. The closure of the Company’s M&EC facility was approved during the second quarter of 2016.

During the third quarter of 2017, the Company recorded a \$672,000 in impairment loss on tangible assets resulting from an updated financial valuation of M&EC’s remaining long-lived tangible assets (inclusive of ARO costs) in accordance with ASC 360, “Property, Plant, and Equipment.” Additionally, during the third and fourth quarters of 2017, the Company recorded an additional \$550,000 and \$850,000, respectively, in closure costs and current closure costs liabilities due to changes in future estimated closure costs.

During the second, third and fourth quarters of 2018, the Company recorded an additional \$1,215,000, \$1,093,000, and \$1,015,000, respectively, in closure costs and current closure liabilities due to changes in estimated future closure costs resulting from additional decommissioning clean-up scope. Given the nature of the closure requirements, additional clean up responsibilities were identified in locations of the building not previously accessible.

During the years ended December 31, 2018 and 2017, M&EC’s revenues were approximately \$155,000 and \$6,312,000, respectively.

NOTE 5

PERMIT AND OTHER INTANGIBLE ASSETS

The following table summarizes changes in the carrying amount of permits. No permit exists at our Services and Medical Segments.

Permit (amount in thousands)	Treatment
Balance as of December 31, 2016	\$ 8,474

Explanation of Responses:

PCB permit amortized ⁽¹⁾	(55)
Balance as of December 31, 2017	8,419
PCB permit amortized ⁽¹⁾	(55)
Permit in progress	79
Balance as of December 31, 2018	\$ 8,443

⁽¹⁾ Amortization for the one definite-lived permit capitalized in 2009. This permit is being amortized over a ten year period in accordance with its estimated useful life. See net carrying value of this permit at December 31, 2018 and 2017 in the table below.

The following table summarizes information relating to the Company's definite-lived intangible assets:

Intangibles (amount in thousands)	Useful Lives (Years)	December 31, 2018			December 31, 2017		
		Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patent	1-17	\$728	\$ (336)	\$ 392	\$657	\$ (306)	\$ 351
Software	3	410	(403)	7	410	(398)	12
Customer relationships	10	3,370	(2,491)	879	3,370	(2,246)	1,124
Permit	10	545	(538)	7	545	(483)	62
Total		\$5,053	\$ (3,768)	\$ 1,285	\$4,982	\$ (3,433)	\$ 1,549

The intangible assets are amortized on a straight-line basis over their useful lives with the exception of customer relationships which are being amortized using an accelerated method.

The following table summarizes the expected amortization over the next five years for our definite-lived intangible assets:

Year	Amount (In thousands)
2019	\$ 255
2020	219
2021	198
2022	172
2023	132

Amortization expense recorded for definite-lived intangible assets was approximately \$350,000 and \$374,000, for the years ended December 31, 2018 and 2017, respectively.

NOTE 6

CAPITAL STOCK, STOCK PLANS, WARRANTS, AND STOCK BASED COMPENSATION

Stock Option Plans

The Company adopted the 2003 Outside Directors Stock Plan (the “2003 Plan”), which was approved by our stockholders at the Company’s July 29, 2003 Annual Meeting of Stockholders. Options granted under the 2003 Plan generally have a vesting period of six months from the date of grant and a term of 10 years, with an exercise price equal to the closing trade price on the date prior to grant date. The 2003 Plan also provides for the issuance to each outside director a number of shares of the Company’s Common Stock in lieu of 65% or 100% (based on option elected by each director) of the fee payable to the eligible director for services rendered as a member of the Board. The number of shares issued is determined at 75% of the market value as defined in the plan (the Company recognizes 100% of the market value of the shares issued). The 2003 Plan, as amended, also provides for the grant of an option to purchase up to 6,000 shares of our Common Stock for each outside director upon initial election to the Board, and the grant of an option to purchase 2,400 shares of our Common Stock upon each re-election. At the July 27, 2017 Annual Meeting of Stockholders (“2017 Annual Meeting”), the Company’s stockholders approved an amendment to the 2003 Plan which authorized the issuance of an additional 300,000 shares of the Company’s Common Stock under the plan. After the approval of the amendment, the number of shares of the Company’s Common Stock authorized under the 2003 Plan was 1,100,000. At December 31, 2018, the 2003 Plan had available for issuance 329,417 shares.

On April 28, 2010, the Company adopted the 2010 Stock Option Plan (“2010 Plan”), which was approved by our stockholders at the Company’s September 29, 2010 Annual Meeting of Stockholders. The 2010 Plan authorized an aggregate grant of 200,000 Non-Qualified Stock Options (“NQSOs”) and Incentive Stock Options (“ISOs”) to officers and employees of the Company for the purchase of up to 200,000 shares of the Company’s Common Stock. The term of each stock option granted is to be fixed by the Compensation Committee, but no stock option is exercisable more than ten years after the grant date, or in the case of an incentive stock option granted to a 10% stockholder, five years after the grant date. As discussed below, as the result of the approval of the 2017 Stock Option Plan (“2017 Plan”) at the Company’s 2017 Annual Meeting, no further options remain available for issuance under the 2010 Plan immediately upon the approval of the 2017 Plan; however, the 2010 Plan remains in full force and effect with respect to the outstanding options issued and unexercised at the date of the approval of the 2017 Plan. At December 31, 2018, the 2010 Plan had an option for the purchase of up to 10,000 shares of our Common Stock with expiration date of July 10, 2020 and an option for the purchase of up to 50,000 shares of our Common Stock with expiration date of May 15, 2022.

The Company adopted the 2017 Plan, which was approved by the Company’s stockholders at the Company’s 2017 Annual Meeting. The 2017 Plan authorizes the grant of options to officers and employees of the Company, including any employee who is also a member of the Board, as well as to consultants of the Company. The 2017 Plan authorizes an aggregate grant of 540,000 NQSOs and ISOs, which includes a rollover of 140,000 shares that remained available for issuance under the 2010 Plan as discussed above. Consultants of the Company can only be granted NQSOs. The term of each stock option granted under the 2017 Plan shall be fixed by the Compensation Committee, but no stock options will be exercisable more than ten years after the grant date, or in the case of an ISO granted to a 10% stockholder, five years after the grant date. The exercise price of any ISO granted under the 2017 Plan to an individual who is not a 10% stockholder at the time of the grant shall not be less than the fair market value of the shares at the time of the grant, and the exercise price of any incentive stock option granted to a 10% stockholder shall not be less than 110% of the fair market value at the time of grant. The exercise price of any NQSOs granted under the plan shall not be less than the fair market value of the shares at the time of grant. At December 31, 2018, the 2017 Plan had available for issuance 130,000 shares.

Stock Options to Employees and Outside Director

On January 18, 2018, the Company granted 6,000 NQSOs from the Company's 2003 Plan to a new director elected by the Company's Board to fill a vacancy on the Board. The options granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the options was \$4.05 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On July 26, 2018, the Company granted an aggregate of 12,000 NQSOs from the Company's 2003 Plan to five of the six re-elected directors at the Company's July 26, 2018 Annual Meeting of Stockholders. Dr. Louis F. Centofanti (a Board member) was not eligible to receive options under the 2003 Plan as an employee of the Company, pursuant to the 2003 Plan. The NQSOs granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO was \$4.30 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On January 13, 2017, the Company granted 6,000 NQSOs from the Company's 2003 Plan to a new director elected by the Company's Board to fill the vacancy left by a Board member who retired from the Board in October 2016. The options granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO was \$3.79 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On July 27, 2017, the Company granted 12,000 NQSOs from the Company's 2003 Plan to five of the six re-elected directors at the 2017 Annual Meeting. Dr. Louis F. Centofanti, who is a member of the Board, was not eligible to receive options under the 2003 Plan as an employee of the Company, pursuant to the 2003 Plan. The NQSOs granted to the five directors were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO was \$3.55 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On October 19, 2017, the Company granted an aggregate of 110,000 ISOs from the 2017 Plan to certain employees. The ISOs granted were for a contractual term of six years with one-fifth vesting annually over a five year period. The exercise price of the ISO was \$3.60 per share, which was equal to the fair market value of the Company's common stock on the date of grant.

On July 27, 2017, the Company granted an aggregate 200,000 ISOs from the 2017 Plan (following the approval of the 2017 Plan as discussed above) to the three named executive officers of the Company. The ISOs granted has a contractual term of six years with one-fifth vesting annually over a five year period. The exercise price of the ISO was \$3.65 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

No employees or directors exercised options during 2018 and 2017.

The Company estimates the fair value of stock options using the Black-Scholes valuation model. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company's stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. The fair value of the options granted during 2018 and 2017 and the related assumptions used in the Black-Scholes option model used to value the options granted were as follows:

	Employee Stock Option Granted			
	October 19, 2017	July 27, 2017		
Weighted-average fair value per share	\$1.75	1.88		
Risk -free interest rate ⁽¹⁾	1.98	%	1.98	%
Expected volatility of stock ⁽²⁾	54.64	%	53.15	%
Dividend yield	None		None	
Expected option life ⁽³⁾	5.0 years		6.0 years	

	Outside Director Stock Options Granted			
	January 18, 2018	July 26, 2018	January 13, 2017	July 27, 2017
Weighted-average fair value per share	\$ 2.55	3.02	\$ 2.63	\$ 2.48
Risk -free interest rate ⁽¹⁾	2.62	% 2.98	% 2.40	% 2.32 %
Expected volatility of stock ⁽²⁾	57.29	% 55.34	% 56.32	% 57.21 %
Dividend yield	None	None	None	None
Expected option life ⁽³⁾	10.0 years	10.0 years	10.0 years	10.0 years

⁽¹⁾ The risk-free interest rate is based on the U.S. Treasury yield in effect at the grant date over the expected term of the option.

⁽²⁾ The expected volatility is based on historical volatility from our traded Common Stock over the expected term of the option.

⁽³⁾ The expected option life is based on historical exercises and post-vesting data.

The following table summarizes stock-based compensation recognized for fiscal years 2018 and 2017.

	Year Ended	
	2018	2017
Employee Stock Options	\$ 147,000	\$ 78,000
Director Stock Options	51,000	46,000
Total	\$ 198,000	\$ 124,000

At December 31, 2018, the Company has approximately \$432,000 of total unrecognized compensation cost related to unvested employee and director options, of which \$131,000 is expected to be recognized in 2019, \$114,000 in 2020, \$114,000 in 2021, with the remaining \$73,000 in 2022.

Stock Options to Consultant

Robert Ferguson is a consultant to the Board and a consultant to the Company in connection with the Company's Test Bed Initiative ("TBI") at its PFNWR facility (see "Note 16 – Related Party Transactions" for further discussion). For Robert Ferguson's consulting work with the Board, he has been receiving monthly compensation of \$4,000. For Robert Ferguson's consulting work in connection with the Company's TBI, on July 27, 2017 ("grant date"), the Company granted Robert Ferguson a stock option from the Company's 2017 Plan for the purchase of up to 100,000 shares of the Company's Common Stock at an exercise price of \$3.65 a share, which was the fair market value of the Company's Common Stock on the date of grant ("Ferguson Stock Option"). The vesting of the Ferguson Stock Option is subject to the achievement of the following milestones ("waste" as noted below is defined as liquid LAW ("low activity waste") and/or liquid TRU ("transuranic waste")):

Upon treatment and disposal of three gallons of waste at the PFNWR facility by January 27, 2018, 10,000 shares of the Ferguson Stock Option shall become exercisable;

Upon treatment and disposal of 2,000 gallons of waste at the PFNWR facility by January 27, 2019, 30,000 shares of the Ferguson Stock Option shall become exercisable; and

Upon treatment and disposal of 50,000 gallons of waste at the PFNWR facility and assistance, on terms satisfactory to the Company, in preparing certain justifications of cost and pricing data for the waste and obtaining a long-term commercial contract relating to the treatment, storage and disposal of waste by January 27, 2021, 60,000 shares of the Ferguson Stock Option shall become exercisable.

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The term of the Ferguson Stock Option is seven (7) years from the grant date. Each of the milestones is exclusive of each other; therefore, achievement of any of the milestones above by Robert Ferguson by the designated date will provide Robert Ferguson the right to exercise the number of options in accordance with the milestone attained (See “Note 18- Subsequent Events” for a discussion of an amendment whereby the second milestone date has been extended to March 31, 2020 from January 27, 2019).

In December 2017, the Company recorded approximately \$20,000 in consulting expenses (included in SG&A) and additional paid-in capital in connection with this transaction which amount was estimated to be the fair value of the 10,000 options on the performance completion date of December 19, 2017 under the first milestone. The fair value of the 10,000 options was estimated using the Black-Scholes valuation model with the following assumptions: 52.65% volatility, risk free interest rate of 2.30%, and an expected life of approximately 6.6 years and no dividends. On May 1, 2018, Robert Ferguson exercised the 10,000 options for the purchase of 10,000 shares of the Company’s Common Stock, resulting in total proceeds paid to the Company of approximately \$36,500.

The Company has not recorded expenses for the remaining 90,000 Ferguson Stock Option since achievement of the performance obligation under each of the two remaining milestones is uncertain at December 31, 2018.

Summary of Stock Option Plans

The summary of the Company’s total plans as of December 31, 2018 and 2017, and changes during the period then ended are presented as follows:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value ⁽²⁾
Options outstanding January 1, 2018	624,800	\$ 4.42		
Granted	18,000	4.22		
Exercised	(10,000)	3.65		
Forfeited/expired	(16,800)	11.70		
Options outstanding end of period ⁽¹⁾	616,000	\$4.23	4.7	\$
Options exercisable at December 31, 2018 ⁽¹⁾	249,333	\$5.04	4.4	\$
Options exercisable and expected to be vested at December 31, 2018	616,000	\$4.23	4.7	\$

Shares

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		Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value ⁽²⁾
Options outstanding January 1, 2017	247,200	\$ 6.69		
Granted	428,000	3.64		
Exercised				
Forfeited/expired	(50,400)	8.95		
Options outstanding end of period ⁽¹⁾	624,800	4.42	5.5	\$ 19,780
Options exercisable at December 31, 2017 ⁽¹⁾	179,467	6.30	4.6	\$13,080
Options vested and expected to be vested at December 31, 2017	624,800	\$ 4.42	5.5	\$19,780

⁽¹⁾Options with exercise prices ranging from \$2.79 to \$13.35

⁽²⁾The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price of the option.

The summary of the Company's nonvested options as of December 31, 2018 and changes during the period then ended are presented as follows:

	Shares	Weighted Average Grant-Date Fair Value
Non-vested options January 1, 2018	445,333	\$ 1.89
Granted	18,000	1.89
Vested	(96,666)	1.99
Forfeited		
Non-vested options at December 31, 2018	366,667	\$ 1.91

Common Stock Issued for Services

The Company issued a total of 60,598 and 61,598 shares of our Common Stock in 2018 and 2017, respectively, under our 2003 Plan to our outside directors as compensation for serving on our Board. As a member of the Board, each director elects to receive either 65% or 100% of the director's fee in shares of our Common Stock. The number of shares received is calculated based on 75% of the fair market value of our Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. The Company recorded approximately \$249,000 and \$234,000 in compensation expense (included in SG&A) for the twelve months ended December 31, 2018 and 2017, respectively, for the portion of director fees earned in the Company's Common Stock.

Shares Reserved

At December 31, 2018, the Company has reserved approximately 616,000 shares of our Common Stock for future issuance under all of the option arrangements.

NOTE 7**LOSS PER SHARE**

The following table reconciles the loss and average share amounts used to compute both basic and diluted loss per share:

(Amounts in Thousands, Except for Per Share Amounts)	Years Ended	
	December 31, 2018	2017
Net loss attributable to Perma-Fix Environmental Services, Inc., common stockholders:		
Loss from continuing operations, net of taxes	\$(1,074)	\$(3,538)
Net loss attributable to non-controlling interest	(320)	(450)
Loss from continuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(754)	\$(3,088)
Loss from discontinuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	(667)	(592)
Net Loss attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(1,421)	\$(3,680)
Basic loss per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(.12)	\$(.31)
Diluted loss per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$(.12)	\$(.31)
Weighted average shares outstanding:		
Basic weighted average shares outstanding	11,855	11,706
Add: dilutive effect of stock options		
Add: dilutive effect of warrants		
Diluted weighted average shares outstanding	11,855	11,706
Potential shares excluded from above weighted average share calculations due to their anti-dilutive effect include:		
Stock options	107	595

NOTE 8**SERIES B PREFERRED STOCK**

The 1,284,730 shares of the Series B Preferred Stock (the "Series B Preferred Stock") of the Company's wholly-owned consolidated subsidiary, M&EC, were non-voting and non-convertible, had a \$1.00 liquidation preference per share

and were redeemable at the option and sole discretion of M&EC at any time, and from time to time, from and after one year from the date of issuance (June 25, 2001) of the Series B Preferred Stock for the purchase price of \$1.00 per share. Holders of shares of M&EC Series B Preferred Stock were entitled to receive, when, as and if declared by M&EC's Board out of funds legally available for payment, cumulative dividends at the rate per annum of 5% per share on the liquidation preference of \$1.00 per share of Series B Preferred Stock. Dividends on the Series B Preferred Stock accrued without interest beginning one year from the date of original issuance (June 25, 2001), and was payable in cash, if, when, and as declared by M&EC Board, quarterly each year commencing on the first dividend due date following the expiration of one year from the date of original issuance. On April 24, 2018, the Company announced a private exchange offer ("Exchange Offer"), to all 13 holders of the M&EC Series B Preferred Stock, to exchange in a private placement exempt from registration, for every share of Series B Preferred Stock tendered, (a) 0.1050805 shares of newly issued Common Stock of the Company, par value \$.001 per share ("Common Stock"), and (b) cash in lieu of fractional shares of Common Stock that would otherwise be issuable to the tendering holder of Series B Preferred Stock, in an amount equal to such fractional share of Common Stock multiplied by the closing price per share of the Common Stock on the last trading day immediately preceding the expiration date of the Exchange Offer. The Exchange Offer was made on an all-or-none basis, for all 1,284,730 shares of Series B Preferred Stock outstanding and had an expiration date of May 30, 2018. The Company owns 100% of the voting capital stock of M&EC. On May 30, 2018, the Exchange Offer was consummated, resulting in the issuance of an aggregate 134,994 unregistered shares of the Company's Common Stock in exchange for the 1,284,730 shares of Series B Preferred Stock and the payment of an aggregate of approximately \$29.00 in cash in lieu of the fractional shares of the Company's Common Stock that would otherwise have been issuable to the tendering holders of the Series B Preferred Stock. The fair value of the 134,994 shares of the Company's Common Stock issued was determined to be approximately \$648,000 which was based on the closing price of the Company's Common Stock on May 30, 2018 of \$4.80 per share. Upon the consummation of the Exchange Offer, the previous holders of the M&EC Series B Preferred Stock forfeited all rights of a holder of Series B Preferred Shares, including the right to receive quarterly cash dividends, and the rights to the cumulative accrued and unpaid dividends with M&EC Series B Preferred Stock in the amount of approximately \$1,022,000 at May 30, 2018. The M&EC Board never declared dividends on the Series B Preferred Stock and our credit facility prohibits the payment of cash dividends without the lender's consent. After the Exchange Offer, the 1,284,730 shares of the Series B Preferred Stock acquired by the Company were contributed by the Company to M&EC and the Series B Preferred Stock was no longer outstanding. The Company recorded a gain of approximately \$1,596,000 during the second quarter of 2018, which was net of approximately \$63,000 in legal costs incurred for the completion of the transaction.

The shares of Company Common Stock issued in exchange for shares of M&EC's Series B Preferred Stock were issued pursuant to an exemption from registration under the Securities Act of 1933, as amended (the "Securities Act"), and, as a result, were considered restricted securities when issued.

NOTE 9

DISCONTINUED OPERATIONS

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment: (1) subsidiaries divested in 2011 and prior, (2) two previously closed locations, and (3) our Perma-Fix of PFSG facility, which is currently in the process of undergoing closure, subject to regulatory approval of necessary plans and permits.

The Company incurred losses from discontinued operations of \$667,000 and \$592,000 for the years ended December 31, 2018 and 2017 (net of taxes of \$0 for each period), respectively. The loss for the year ended 2018 included an increase of approximately \$50,000 in remediation reserve for our Perma-Fix of Dayton ("PFD") subsidiary due to reassessment of the remediation reserve. The remaining loss for each of the periods noted above were primarily due to costs incurred in the administration and continued monitoring of our discontinued operations.

The following table presents the major class of assets of discontinued operations at December 31, 2018 and 2017. No assets and liabilities were held for sale at December 31, 2018 and 2017.

(Amounts in Thousands)	December 31, 2018	December 31, 2017
Current assets		
Other assets	\$ 107	\$ 89
Total current assets	107	89
Long-term assets		
Property, plant and equipment, net ⁽¹⁾	81	81
Other assets	118	195
Total long-term assets	199	276
Total assets	\$ 306	\$ 365
Current liabilities		
Accounts payable	\$ 10	\$ 8
Accrued expenses and other liabilities	296	265
Environmental liabilities	50	632
Total current liabilities	356	905
Long-term liabilities		
Closure liabilities	126	120

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Environmental liabilities	837	239
Total long-term liabilities	963	359
Total liabilities	\$ 1,319	\$ 1,264

(1) net of accumulated depreciation of \$10,000 for each period presented.

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The Company's discontinued operations include a note receivable in the original amount of approximately \$375,000 recorded in May 2016 resulting from the sale of property at our Perma-Fix of Michigan, Inc. ("PFMI") subsidiary. This note requires 60 equal monthly installment payments by the buyer of approximately \$7,250 (which includes interest). At December 31, 2018, the outstanding amount on this note receivable totaled approximately \$202,000, of which approximately \$84,000 is included in "Current assets related to discontinued operations" and approximately \$118,000 is included in "Other assets related to discontinued operations" in the accompanying Consolidated Balance Sheets.

Environmental Liabilities

The Company has three remediation projects, which are currently in progress at our PFD, Perma-Fix of Memphis, Inc. ("PFM" – closed location), and PFSG (in closure status) subsidiaries. The Company divested PFD in 2008; however, the environmental liability of PFD was retained by the Company upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2018, we had total accrued environmental remediation liabilities of \$887,000, of which \$50,000 are recorded as a current liability, an increase of \$16,000 from the December 31, 2017 balance of \$871,000. The net increase presents an increase of approximately \$50,000 made to the reserve at our PFD subsidiary due to reassessment of the remediation reserve and payments of approximately \$34,000 on remediation projects for our PFD and PFSG subsidiaries.

The current and long-term accrued environmental liability at December 31, 2018 is summarized as follows (in thousands).

	Current Accrual	Long-term Accrual	Total
PFD	\$ 50	\$ 60	\$110
PFM	—	15	15
PFSG	—	762	762
Total liability	\$ 50	\$ 837	\$887

NOTE 10

LONG-TERM DEBT

Explanation of Responses:

Long-term debt consists of the following at December 31, 2018 and December 31, 2017:

(Amounts in Thousands)	December 31, 2018	December 31, 2017
Revolving Credit facility dated October 31, 2011, as amended, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, balance due March 24, 2021. Effective interest rate for 2018 and 2017 was 5.8% and 4.1%, respectively. (1) (2)	\$ 639	\$ —
Term Loan dated October 31, 2011, as amended, payable in equal monthly installments of principal of \$102, balance due on March 24, 2021. Effective interest rate for 2018 and 2017 was 5.5% and 4.6%, respectively. (1) (2)	2,663 (3)	3,847 (3)
Total debt	3,302	3,847
Less current portion of long-term debt	1,184	1,184
Long-term debt	\$ 2,118	\$ 2,663

(1) Our revolving credit facility is collateralized by our accounts receivable and our term loan is collateralized by our property, plant, and equipment.

(2) See below “Revolving Credit and Term Loan Agreement” for monthly payment interest options.

(3) Net of debt issuance costs of (\$80,000) and (\$115,000) at December 31, 2018 and December 31, 2017, respectively.

Revolving Credit and Term Loan Agreement

The Company entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 (“Amended Loan Agreement”), with PNC National Association (“PNC”), acting as agent and lender. The Amended Loan Agreement has been amended from time to time since the execution of the Amended Loan Agreement. The Amended Loan Agreement, as subsequently amended (“Revised Loan Agreement”), provides the Company with the following credit facility with a maturity date of March 24, 2021: (a) up to \$12,000,000 revolving credit (“revolving credit”) and (b) a term loan (“term loan”) of approximately \$6,100,000, which requires monthly installments of approximately \$101,600 (based on a seven-year amortization). The maximum that we can borrow under the revolving credit is based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

Under the Revised Loan Agreement, we have the option of paying an annual rate of interest due on the revolving credit at prime (5.50% at December 31, 2018) plus 2% or London Inter Bank Offer Rate (“LIBOR”) plus 3% and the term loan at prime plus 2.5% or LIBOR plus 3.5%.

Pursuant to the Revised Loan Agreement, the Company may terminate the Revised Loan Agreement, upon 90 days’ prior written notice upon payment in full of its obligations under the Revised Loan Agreement. The Company agreed to pay PNC 1.0% of the total financing had the Company paid off its obligations on or before March 23, 2017, .50% of the total financing had the Company paid off its obligations after March 23, 2017 but prior to or on March 23, 2018, and .25% of the total financing if the Company pays off its obligations after March 23, 2018 but prior to or on March 23, 2019. No early termination fee shall apply if the Company pays off its obligations after March 23, 2019.

At December 31, 2018, the borrowing availability under our revolving credit was approximately \$2,368,000, based on our eligible receivables and includes an indefinite reduction of borrowing availability of \$1,000,000 that the Company’s lender has imposed. The Company’s borrowing availability under our revolving credit was also reduced by outstanding standby letters of credit totaling approximately \$2,648,000. Previously, the Company’s lender had imposed an indefinite reduction of borrowing availability of \$2,000,000; however, on July 26, 2018, the Company entered into an amendment to our Revised Loan Agreement with our lender which provided, among other things, for the release of \$1,000,000 of the \$2,000,000 reduction in borrowing availability by our lender. The release of this \$1,000,000 in borrowing availability reduction is to be used by the Company for working capital purposes. Most of the other terms of the Revised Loan Agreement remain principally unchanged.

The Company’s credit facility with PNC contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by PNC, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. Our Revised Loan Agreement prohibits us from paying cash dividends on our Common Stock without prior approval from our lender. The Company met all of its

financial covenant requirements in 2018 with the exception of its quarterly minimum fixed charge coverage ratio requirement for the fourth quarter of 2018. In March 2019, the Company entered into another amendment to its Revised Loan Agreement which provided a waiver for this non-compliance in addition to further amendments to our fixed charge coverage ratio requirements (see “Note 19 – Subsequent Events - Revolving Credit and Term Loan Agreement” for a discussion of this amendment). As a result of this amendment, the Company expects to meet its financial covenant requirements in 2019 and into the first quarter of 2020.

The following table details the amount of the maturities of long-term debt maturing in future years at December 31, 2018 (excludes debt issuance costs of \$80,000).

Year ending December 31:	
(In thousands)	
2019	1,219
2020	1,219
2021	944
Total	\$3,382

NOTE 11

CAPITAL LEASES

The following table details the amount of the maturities of capital leases maturing in future years at December 31, 2018 (in thousands):

Year ending December 31:	Capital
	Leases
2019	\$ 181
2020	226
2021	42
Total	449 (1)

(1)Interest at rate ranging from 5.8% to 11.9%

The Company had no capital leases in 2017.

NOTE 12

ACCRUED EXPENSES

Accrued expenses include the following (in thousands) at December 31:

Explanation of Responses:

	2018	2017
Salaries and employee benefits	\$3,228	\$2,988
Accrued sales, property and other tax	404	402
Interest payable	7	3
Insurance payable	710	630
Other	665	759
Total accrued expenses	\$5,014	\$4,782

Each of our executives has an individual Management Incentive Plan (“MIP”) for fiscal years 2018 and 2017 which provides for the potential payment of performance compensation (see “Note 17 – Related Party Transactions – MIPs” for further discussion of the MIPs). No performance compensation payments were earned under any of the MIPs for 2018 and 2017.

NOTE 13**ACCRUED CLOSURE COSTS AND ARO**

Accrued closure costs represent our estimated environmental liability to clean up our fixed-based regulated facilities as required by our permits, in the event of closure. Changes to reported closure liabilities (current and long-term) for the years ended December 31, 2018 and 2017, were as follows:

Amounts in thousands	
Balance as of December 31, 2016	\$7,315
Accretion expense	460
Spending	(2,037)
Adjustment to closure liability	2,657
Balance as of December 31, 2017	8,395
Accretion expense	325
Spending	(5,293)
Adjustment to closure liability	3,323
Balance as of December 31, 2018	\$6,750

The Company recorded an additional \$3,323,000 and \$1,400,000 in closure liabilities in 2018 and 2017, respectively, due to changes in estimated future closure costs for our M&EC subsidiary which is in closure status (see “Note 4 – M&EC Facility” for further information of these additional closure liabilities recorded). The Company also recorded an additional \$1,257,000 in closure liabilities in 2017 for its DSSI subsidiary due to changes in estimated future closure costs.

In 2018 and 2017, the Company had spending of approximately \$4,991,000 and \$1,872,000, respectively, in closure related activities for the M&EC subsidiary. In 2018 and 2017, the Company had spending of approximately \$302,000 and \$165,000, respectively, in closure related activities for the PFNWR subsidiary in connection with the closure of certain processing equipment/enclosure.

At December 31, 2018 and 2017, M&EC’s closure liabilities totaled approximately \$1,142,000 and \$2,791,000, respectively, with the entire amount classified as current.

The reported closure asset or ARO, is reported as a component of “Net Property and equipment” in the Consolidated Balance Sheets at December 31, 2018 and 2017 with the following activity for the years ended December 31, 2018 and 2017:

Explanation of Responses:

Amounts in thousands	
Balance as of December 31, 2016	\$4,148
Amortization of closure and post-closure asset	(1,071)
Impairment of closure and post-closure asset	(413)
Adjustment to closure and post-closure asset	1,257
Balance as of December 31, 2017	3,921
Amortization of closure and post-closure asset	(191)
Balance as of December 31, 2018	\$3,730

The impairment of ARO for 2017 resulted from the impairment of M&EC's remaining tangible assets recorded in 2017 (See "Note 4 – M&EC Facility"). The adjustment made to ARO for 2017 was due to the increase in closure liabilities recorded for the DSSI subsidiary as discussed above.

NOTE 14**INCOME TAXES**

The components of current and deferred federal and state income tax (benefit) expense for continuing operations for the years ended December 31, consisted of the following (in thousands):

	2018	2017
Federal income tax benefit - current	\$	\$(780)
Federal income tax benefit - deferred	(1,171)	(778)
State income tax expense - current	173	163
State income tax expense - deferred	62	110
Total income tax benefit	\$(936)	\$(1,285)

An overall reconciliation between the expected tax benefit using the federal statutory rate of 21% and 34% for the years ended 2018 and 2017, respectively, and the benefit for income taxes from continuing operations as reported in the accompanying Consolidated Statement of Operations is provided below (in thousands).

	2018	2017
Tax benefit at statutory rate	\$(392)	\$(1,640)
State tax benefit, net of federal benefit	(178)	(295)
Change in deferred tax rates	(78)	1,711
Impact of Tax Act		(1,695)
Permanent items	(388)	104
Difference in foreign rate	13	170
Change in deferred tax liabilities	114	881
Other	(99)	(135)
Decrease in valuation allowance	72	(386)
Income tax benefit	\$(936)	\$(1,285)

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "TCJA") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 35% to 21% for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system, the elimination of AMT for corporations and a one-time transition tax on the mandatory deemed repatriation of foreign earnings.

As of December 31, 2018, the Company has completed its accounting for the tax effects of the enactment of the TCJA under the guidance of Staff Accounting Bulletin No. 118 (“SAB 118”) (issued December 22, 2017), which provides registrants a one-year measurement period to report the impact of the TCJA.

Specific to the enactment of the TCJA, the Company recognized a tax benefit of \$1,695,000 in the fourth quarter of 2017 which consisted of \$916,000 related to the re-measurement of deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future and \$779,000 related to the reversal of valuation allowance and refunding of AMT credit carryforwards.

An additional provision of the TCJA was to provide an indefinite carryforward period for net operating losses (“NOLs”) generated starting in 2018. Also, the law limits the utilization of these NOLs to 80% of taxable income in the year in which the NOL is utilized. The Company has been carrying on its balance sheet a deferred tax liability related to indefinite-lived intangible assets. A common accounting interpretation of the new TCJA provisions is that deferred tax assets related to indefinite-lived NOLs may now be used to offset indefinite-lived deferred tax liabilities, up to 80% of the amount of the liability. During 2018, the Company forecasted a substantial tax loss for the full year due to the closure of the M&EC facility. As a result, the Company released a portion of the valuation allowance against deferred tax assets equal to 80% of the deferred tax liability related to indefinite-lived intangible assets and recorded a tax benefit in the amount of approximately \$1,235,000 in accordance to the provisions of the TCJA.

The global intangible low-taxed income (“GILTI”) provisions under the TCJA require the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. The Company has elected to account for GILTI tax in the period in which it is incurred, and therefore has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the years ended December 31, 2017 and 2018. As the foreign subsidiaries are all in loss positions for 2018, there is no GILTI inclusion for the current year.

The base-erosion and anti-abuse tax provisions (“BEAT”) in the TCJA eliminates the deduction of certain base-erosion payments made to related foreign corporations, and imposes a minimum tax if greater than regular tax. The Company does not expect it will be subject to this tax due to the immaterial amounts of outbound U.S. payments and therefore has not included any tax impacts of BEAT in its consolidated financial statements for the years ended December 31, 2017 and 2018.

The TCJA imposes a one-time transition tax on previously untaxed earnings and profits of foreign subsidiaries. As of December 31, 2018, the Company has current and accumulated deficits in earnings and profits for all of its foreign subsidiaries. As such, the Company does not expect any exposure to the one-time transition tax.

The Company had temporary differences and net operating loss carry forwards from both our continuing and discontinued operations, which gave rise to deferred tax assets and liabilities at December 31, 2018 and 2017 as follows (in thousands):

	2018	2017
Deferred tax assets:		
Net operating losses	\$9,540	\$5,992
Environmental and closure reserves	2,124	2,158
Depreciation and amortization	—	907
Other	1,263	1,252
Deferred tax liabilities:		
Depreciation and amortization	(2,418)	—
Goodwill and indefinite lived intangible assets	(586)	(1,694)
Prepaid expenses	(30)	(50)
	9,893	8,565
Valuation allowance	(10,479)	(10,259)
Net deferred income tax liabilities	(586)	(1,694)

In 2018 and 2017, the Company concluded that it was more likely than not that \$10,479,000 and \$10,259,000 of our deferred income tax assets would not be realized, and as such, a full valuation allowance was applied against those deferred income tax assets.

The Company has estimated net operating loss carryforwards (“NOLs”) for federal and state income tax purposes of approximately \$21,277,000 and \$76,312,000, respectively, as of December 31, 2018. The estimated consolidated federal and state NOLs include approximately \$2,629,000 and \$3,797,000, respectively, of our majority-owned subsidiary, PF Medical, which is not part of our consolidated group for tax purposes. These net operating losses can be carried forward and applied against future taxable income, if any, and expire in various amounts starting in 2021. However, as a result of various stock offerings and certain acquisitions, which in the aggregate constitute a change in control, the use of these NOLs will be limited under the provisions of Section 382 of the Internal Revenue Code of

1986, as amended. Additionally, NOLs may be further limited under the provisions of Treasury Regulation 1.1502-21 regarding Separate Return Limitation Years.

The tax years 2016 through 2018 remain open to examination by taxing authorities in the jurisdictions in which the Company operates.

No uncertain tax positions were identified by the Company for the years currently open under statute of limitations, including 2018 and 2017.

The Company had no federal income tax payable for the years ended December 31, 2018 and 2017.

NOTE 15

COMMITMENTS AND CONTINGENCIES

Hazardous Waste

In connection with our waste management services, we process both hazardous and non-hazardous waste, which we transport to our own, or other, facilities for destruction or disposal. As a result of disposing of hazardous substances, in the event any cleanup is required at the disposal site, we could be a potentially responsible party for the costs of the cleanup notwithstanding any absence of fault on our part.

Legal Matters

In the normal course of conducting our business, we are involved in various litigation. We are not a party to any litigation or governmental proceeding which our management believes could result in any judgments or fines against us that would have a material adverse effect on our financial position, liquidity or results of future operations.

Insurance

The Company has a 25-year finite risk insurance policy entered into in June 2003 (“2003 Closure Policy”) with AIG, which provides financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure. The 2003 Closure Policy, as amended, provides for a maximum allowable coverage of \$39,000,000 and has available capacity to allow for annual inflation and other performance and surety bond requirements. At December 31, 2018, our financial assurance coverage amount under this 2003 Closure Policy totaled approximately \$29,977,000. The Company has recorded \$15,971,000 and \$15,676,000 in sinking fund related to this policy in other long term assets on the accompanying Consolidated Balance Sheets at December 31, 2018 and 2017, respectively, which includes interest earned of \$1,500,000 and \$1,205,000 on the sinking fund as of December 31, 2018 and 2017, respectively. Interest income for the years ended 2018 and 2017 was approximately \$295,000 and \$130,000, respectively. If the Company so elects, AIG is obligated to pay the Company an amount equal to 100% of the sinking fund account balance in return for complete release of liability from both us and any applicable regulatory agency using this policy as an instrument to comply with financial assurance requirements.

The Company also had a finite risk insurance policy dated August 2007 for our PFNWR facility with AIG (“PFNWR policy”) which provided financial assurance to the State of Washington in the event of closure of the PFNWR facility. In April 2017, the Company received final releases from state and federal regulators for the PFNWR policy which enabled the Company to cancel the PFNWR policy resulting in the release of approximately \$5,951,000 (which had been recorded in other long term assets on the Company’s Consolidated Balance Sheets) on May 1, 2017 in finite sinking funds previously held by AIG as collateral for the PFNWR policy. The Company used the released finite sinking funds to pay off our revolving credit with the remaining funds used for general working capital needs. The Company acquired new bonds in the required amount of approximately \$7,000,000 (“new bonds”) to replace the PFNWR policy in providing financial assurance for the PFNWR facility. Upon receipt of the \$5,951,000 in finite sinking funds from AIG, the Company and its lender executed a standby letter of credit in the amount of \$2,500,000 as collateral for the new bonds for the PFNWR facility.

Letter of Credits and Bonding Requirements

From time to time, the Company is required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At December 31, 2018, the total amount of standby letters of credit outstanding totaled approximately \$2,648,000 and the total amount of bonds outstanding totaled approximately \$11,284,000.

Operating Leases

The Company leases certain facilities and equipment under non-cancelable operating leases. The following table lists future minimum rental payments at December 31, 2018 under these (in thousands):

Year ending December 31:	
2019	575
2020	406
2021	308
2022	103
Total	\$ 1,392

Total rent expense under these leases was \$766,000 and \$754,000 for the years ended 2018 and 2017, respectively.

NOTE 16**PROFIT SHARING PLAN**

The Company adopted a 401(k) Plan in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. The Company, at its discretion, may make matching contributions of 25% based on the employee's elective contributions. Company contributions vest over a period of five years. In 2018 and 2017, the Company contributed approximately \$338,000 and \$326,000 in 401(k) matching funds, respectively.

NOTE 17**RELATED PARTY TRANSACTIONS**

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$173,000 and \$168,000 for 2018 and 2017, respectively. David Centofanti is the son of our EVP of Strategic Initiatives and a Board member, Dr. Louis Centofanti. Dr. Louis Centofanti previously held the position of President and CEO until September 8, 2017.

Robert Ferguson

Robert Ferguson serves as an advisor to our Board and was also a member of the Supervisory Board of PF Medical (until May 11, 2018), our majority-owned Polish subsidiary of the Company. Robert Ferguson previously served as our Board member from June 2007 to February 2010 and again from August 2011 to September 2012. As an advisor to our Board, Robert Ferguson is paid \$4,000 monthly plus reasonable expenses. For such services, Robert Ferguson received compensation of approximately \$50,000 and \$51,000 for the years 2018 and 2017, respectively. Robert Ferguson is also a consultant to the Company in connection with our TBI at our PFNWR facility (see “Note 6 – Capital Stock, Stock Plan, Warrants, and Stock Based Compensation” for a discussion of the options granted to Robert Ferguson in connection with the TBI initiatives).

Employment Agreements

The Company entered into employment agreements with each of Mark Duff (President and CEO effective September 8, 2017, who previously held the position of EVP and COO), Ben Naccarato (CFO), and Dr. Louis Centofanti, (EVP of Strategic Initiatives, who retired from the position of President and CEO effective September 8, 2017) with each employment agreement dated September 8, 2017. Each of the employment agreements is effective for three years from September 8, 2017 (the “Initial Term”) unless earlier terminated by us or by the executive officer. At the end of the Initial Term of each employment agreement, each employment agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, the Company or the executive officer provides written notice not to extend the terms of the employment agreement. Each employment agreement provides for annual base salaries, performance bonuses as provided in the MIP as approved by our Board, and other benefits commonly found in such agreements. In addition, each employment agreement provides that in the event the executive officer terminates his employment for “good reason” (as defined in the agreements) or is terminated by the Company without cause (including the executive officer terminating his employment for “good reason” or is terminated by us without cause within 24 months after a Change in Control (as defined in the agreement)), the Company will pay the executive officer the following: (a) a sum equal to any unpaid base salary; (b) accrued unused vacation time and any employee benefits accrued as of termination but not yet been paid (“Accrued Amounts”); (c) two years of full base salary; (d) performance compensation under the MIP earned with respect to the fiscal year immediately preceding the date of termination; and (e) an additional year of performance compensation as provided under the MIP earned, if not already paid, with respect to the fiscal year immediately preceding the date of termination. If the executive terminates his employment for a reason other than for good reason, the Company will pay to the executive the amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an executive officer, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the executive officer’s death. In the event of an executive officer terminating his employment for “good reason” or is terminated by us without cause, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the executive’s date of termination.

The Company had previously entered into an employment agreement with each of Dr. Louis Centofanti and Ben Naccarato on July 10, 2014 which both employment agreements were due to expire on July 10, 2018, as amended (the “July 10, 2014 Employment Agreements”). The Company also had previously entered into an employment agreement dated January 19, 2017 (which was effective June 11, 2016) with Mark Duff which is due to expire on June 11, 2019 (the “January 19, 2017 Employment Agreement”). The July 10, 2014 Employment Agreements and the January 19, 2017 Employment Agreement were terminated effective September 8, 2017.

MIPs

On January 18, 2018, our Board and the Compensation Committee approved individual MIP for each Mark Duff, CEO and President, Ben Naccarato, CFO, and Dr. Louis Centofanti, EVP of Strategic Initiatives. The MIPs are effective January 1, 2018 and applicable for year ended December 31, 2018. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive's 2018 annual base salary on the approval date of the MIP. The potential target performance compensation ranges from 5% to 100% (\$13,350 to \$267,000) of the base salary for the CEO and President; 5% to 100% (\$11,475 to \$229,494) of the base salary for the CFO; and 5% to 100% (\$11,170 to \$223,400) of the base salary for the EVP of Strategic Initiatives. Pursuant to the MIPs, the Compensation Committee has the right to modify, change or terminate the MIPs at any time and for any reason. No performance compensation was earned or payable under each of the 2018 MIPs as discussed above.

NOTE 18

SEGMENT REPORTING

In accordance with ASC 280, "Segment Reporting", we define an operating segment as a business activity:

from which we may earn revenue and incur expenses;

whose operating results are regularly reviewed by the chief operating decision maker ("CODM") to make decisions about resources to be allocated to the segment and assess its performance; and

for which discrete financial information is available.

We currently have three reporting segments, which include Treatment and Services Segments, which are based on a service offering approach; and Medical, whose primary purpose at this time is the R&D of a new medical isotope production technology. The Medical Segment has not generated any revenues and all costs incurred are reflected within R&D in the accompanying Consolidated Statements of Operations. As previously disclosed, the Medical Segment ceased a substantial portion of its R&D activities for the medical isotope production technology due to the need for substantial capital to fund such activities. Additionally, the Company is reviewing further strategic options for the Medical Segment. The Company does not anticipate that the Medical Segment will restart such activities until it obtains such funding. Our reporting segments exclude our corporate headquarter and our discontinued operations (see “Note 9 – Discontinued Operations”) which do not generate revenues.

The table below shows certain financial information of our reporting segments as of and for the years ended December 31, 2018 and 2017 (in thousands).

Segment Reporting as of and for the year ended December 31, 2018

	Treatment	Services	Medical	Segments Total	Corporate (²)	Consolidated Total
Revenue from external customers	\$ 36,271	\$ 13,268	—	\$ 49,539 (³)	\$ —	\$ 49,539
Intercompany revenues	509	70	—	579	—	—
Gross profit	7,197	1,264	—	8,461	—	8,461
Research and development	483	—	811	1,294	76	1,370
Interest income	—	—	—	—	295	295
Interest expense	(22)	(2)	—	(24)	(227)	(251)
Interest expense-financing fees	—	—	—	—	(38)	(38)
Depreciation and amortization	943	465	—	1,408	47	1,455
Segment income (loss) before income taxes	4,550 (⁶)	(756)	(811)	2,983	(4,993)	(2,010)
Income tax (benefit) expense	(943)(⁷)	—	—	(943)	7	(936)
Segment income (loss)	5,493	(756)	(811)	3,926	(5,000)	(1,074)
Segment assets(¹)	32,800	5,188	25	38,013	19,429 (⁴)	57,442
Expenditures for segment assets	1,311	117	—	1,428	4	1,432
Total debt	—	—	—	—	3,302 (⁵)	3,302

Segment Reporting as of and for the year ended December 31, 2017

	Treatment	Services	Medical	Segments Total	Corporate (²)	Consolidated Total
Revenue from external customers	\$ 37,750	\$ 12,019	—	\$ 49,769 (³)	\$ —	\$ 49,769
Intercompany revenues	362	31	—	393	—	—

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Gross profit	7,916	704	—	8,620	—	8,620
Research and development	439	—	1,141	1,580	15	1,595
Interest income	—	—	—	—	140	140
Interest expense	(35)	(5)	—	(40)	(275)	(315)
Interest expense-financing fees	—	—	—	—	(35)	(35)
Depreciation and amortization	3,228	536	—	3,764	39	3,803
Segment income (loss) before income taxes	3,577 ⁽⁸⁾	(2,286)	(1,141)	150	(4,973)	(4,823)
Income tax (benefit) expense	(1,290) ⁽⁷⁾	—	—	(1,290)	5	(1,285)
Segment income (loss)	4,867	(2,286)	(1,141)	1,440	(4,978)	(3,538)
Segment assets ⁽¹⁾	32,724	6,324	548	39,596	19,942 ⁽⁴⁾	59,538
Expenditures for segment assets	396	43	—	439	—	439
Total debt	—	—	—	—	3,847 ⁽⁵⁾	3,847

(1) Segment assets have been adjusted for intercompany accounts to reflect actual assets for each segment.

(2) Amounts reflect the activity for corporate headquarters not included in the segment information.

The Company performed services relating to waste generated by the domestic government clients (includes U.S federal, state and local), either directly as a prime contractor or indirectly for others as a subcontractor to government entities, representing approximately \$34,811,000 or 70.3% of total revenue for 2018 and \$37,019,000 or 74.4% of total revenue for 2017. The following reflects such revenue generated by our two segments:

	2018	2017
Treatment	\$25,181,000	\$27,956,000
Services	9,630,000	9,063,000
Total	\$34,811,000	\$37,019,000

⁽⁴⁾ Amount includes assets from our discontinued operations of \$306,000 and \$365,000 at December 31, 2018 and 2017, respectively.

⁽⁵⁾ Net of debt issuance costs of (\$80,000) and (\$115,000) for 2018 and 2017, respectively (see “Note 10 – “Long-Term Debt” for additional information).

⁽⁶⁾ Amount includes a net gain of \$1,596,000 recorded resulting from the exchange offer of the Series B Preferred Stock of the Company’s M&EC subsidiary (see “Note 8 – Series B Preferred Stock”)

⁽⁷⁾ For the year ended December 31, 2018 and 2017, amount includes a tax benefit recorded in the amount of approximately \$1,235,000 and \$1,695,000, respectively, resulting from the TCJA enacted on December 22, 2017 (see “Note 14 – Income Taxes” for further information of this tax benefit).

⁽⁸⁾ Amount includes tangible asset impairment loss of \$672,000 recorded in connection with the closure of M&EC (see “Note 4 – M&EC Facility”).

NOTE 19

SUBSEQUENT EVENTS

MIPs

On January 17, 2019, the Company’s Compensation Committee and the Board approved individual MIP for the CEO, CFO, and EVP of Strategic Initiatives. Each MIP is effective January 1, 2019 and applicable for the year ended December 31, 2019. Each MIP provides guidelines for the calculation of annual cash incentive based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive’s annual 2019 base salary on the approval date of the MIP. The potential target performance compensation ranges from 5% to 150% of the 2019 base salary for the CEO (\$14,350 to \$430,500), 5% to 100% of the 2019 base salary for the CFO (\$11,762 to \$235,231), and 5% to 100% of the 2019 base salary for the EVP of Strategic Initiatives

(\$11,449 to \$228,985).

Grant of Options

On January 17, 2019 the Company's Compensation Committee and the Board approved the grant of 105,000 ISOs from the 2017 Stock Option Plan to certain employees, which included our named executive officers as follows: 25,000 ISOs to our CEO, Mark Duff; 15,000 ISOs to our CFO, Ben Naccarato; and 15,000 ISOs to our EVP of Strategic Initiatives, Dr. Louis Centofanti. The ISOs granted were for a contractual term of six years with one-fifth vesting annually over a five year period. The exercise price of the ISO was \$3.15 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

Stock Option to Consultant

As discussed in "Note 6 – Capital Stock, Stock Plans, Warrants, and Stock Based Compensation – Stock Options to Consultant", the Company granted a NQSO to Robert Ferguson for the purchase of up to 100,000 shares of the Company's Common Stock ("Ferguson Stock Option") in connection with his work as a consultant to the Company's TBI. The vesting of the Ferguson Stock Option is subject to the achievement of three separate milestones by certain date. On January 17, 2019, the Company's Compensation Committee and Board approved an amendment to the Ferguson Stock Option whereby the vesting date for the second milestone was amended from "by January 27, 2019" to "by March 31, 2020." All other terms of the Ferguson Stock Option remain unchanged.

Loan and Securities Purchase Agreement, Promissory Note and Subordination Agreement

On April 1, 2019, the Company completed a lending transaction with Robert Ferguson (the “Lender”), whereby the Company borrowed from the Lender the sum of \$2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the “Loan”). The Lender is a shareholder of the Company. The Lender also currently serves as a consultant to the Company’s PFNWR subsidiary (see Note 17 - Related Party Transactions – Robert Ferguson” for further information). The proceeds from the Loan will be used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately \$208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also allows for prepayment of principal payments over the term of the Loan without penalty. In connection with the above Loan, the Lender entered into a Subordination Agreement with our credit facility lender, whereby the Lender agreed to subordinate payment under the Loan, and agreed that the Loan will be junior in right of payment to the credit facility in the event of default or bankruptcy or other insolvency proceeding by us. As consideration for us receiving the Loan, the Company issued a Warrant to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of \$3.51, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024. As further consideration for the Loan, the Company also will issue an aggregate 75,000 shares of our Common Stock to the Lender. The 75,000 shares of Common Stock and 60,000 Common Stock purchase warrant will be and was issued in a private placement that was exempt from registration under the Securities Act and bear a restrictive legend against resale except in a transaction registered under the Securities Act or in a transaction exempt from registration thereunder.

Upon default, the Lender will have the right to elect to receive in full and complete satisfaction of the Company’s obligations under the Loan either: (a) the cash amount equal to the sum of the unpaid principal balance owing under the loan and all accrued and unpaid interest thereon (the “Payoff Amount”) or (b) upon meeting certain conditions, the number of whole shares of the Company’s Common Stock (the “Payoff Shares”) determined by dividing the Payoff Amount by the dollar amount equal to the closing bid price of our Common Stock on the date immediately prior to the date of default, as reported or quoted on the primary nationally recognized exchange or automated quotation system on which our Common Stock is listed; provided however, that the dollar amount of such closing bid price shall not be less than \$3.51, the closing bid price for our Common Stock as disclosed on NASDAQ.com immediately preceding the signing of this loan agreement.

If issued, the Payoff Shares will not be registered and the Lender will not be entitled to registration rights with respect to the Payoff Shares. The aggregate number of shares, warrant shares, and Payoff Shares that are or will be issued to the Lender pursuant to the Loan, together with the aggregate shares of the Company’s Common Stock and other voting securities owned by the Lender as of the date of issuance of the Payoff Shares, shall not exceed the number of shares of the Company’s Common Stock equal to 14.9% of the number of shares of the Company’s Common Stock issued and outstanding as of the date immediately prior to the default, less the number of shares of the Company’s Common Stock owned by the Lender immediately prior to the date of such default plus the number of shares of our Common Stock that may be acquired by the Lender under warrants and/or options outstanding immediately prior to the date of such default.

The Company is currently evaluating the accounting treatment of this transaction and the impact to our financial statements.

Revolving Credit and Term Loan Agreement

On March 29, 2019, the Company entered into an amendment to its Revised Loan Agreement with its lender under the credit facility which provided the following:

waived the Company's failure to meet the minimum quarterly fixed charge coverage ratio ("FCCR") requirement for the fourth quarter of 2018;

waived the quarterly FCCR testing requirement for the first quarter of 2019;

revised the methodology to be used in calculating the FCCR in each of the second and third quarters of 2019 (with continued requirement to maintain a minimum 1.15:1 ratio in each of the quarters);

revised the minimum Tangible Adjusted Net Worth requirement (as defined in the Revised Loan Agreement) from \$26,000,000 to \$25,000,000;

eliminated the LIBOR interest payment option of paying annual rate of interest due on our term loan and revolving credit until the Company becomes compliant with its FCCR requirement again. As a result of this amendment, the Company's payment of annual rate of interest due on our term loan will be at prime plus 2.5% and prime plus 2.0% for our revolving credit;

provided consent for the \$2,500,000 loan that the Company entered into with Robert Ferguson as discussed above.

The Company is not allowed to make any principal prepayment on this loan until it receives the restricted finite risk sinking funds held as collateral by AIG under our financial assurance policy. The Company expects to receive this restricted funds resulting from the closure of our M&EC facility (see "Note 1 – Description of Business and Basis of Presentation - Financial Position and Liquidity" for a discussion of this expected receipt); and

revised the annual rate used to calculate the Facility Fee (as defined in the Revised Loan Agreement) (unused revolving credit line fee) from 0.250% to 0.375%.

Most of the other terms of the Revised Loan Agreement remain principally unchanged. In connection with this amendment, the Company paid its lender a fee of \$20,000 (see "Note 10 – Long Term Debt – Revolving Credit and Term Loan Agreement" for a discussion of the Revised Loan Agreement prior to this amendment).

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures.

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the Securities and Exchange Commission (the “Commission”) is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Commission and that such information is accumulated and communicated to our management, including the Chief Executive Officer (“CEO”) (Principal Executive Officer), and Chief Financial Officer (“CFO”) (Principal Financial Officer), as appropriate to allow timely decisions regarding the required disclosure. In designing and assessing our disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their stated control objectives and are subject to certain limitations, including the exercise of judgment by individuals, the difficulty in identifying unlikely future events, and the difficulty in eliminating misconduct completely. Our management, with the participation of our CEO and CFO, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based upon this assessment, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of December 31, 2018.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934. Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraudulent acts. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. A control system, no matter how well designed, can provide only reasonable assurance with respect to financial statement preparation and presentation.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the consolidated financial statements in accordance with generally accepted accounting principles in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with appropriate authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the consolidated financial statements.

Management, with the participation of our CEO and CFO, conducted an assessment of the effectiveness of internal control over financial reporting as of December 31, 2018 based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on this assessment, management, with the participation of our CEO and CFO, concluded that the Company’s internal control over financial reporting was effective as of December 31, 2018.

This Form 10-K does not include an attestation report of the Company’s independent registered public accounting firm regarding internal control over financial reporting. Since the Company is not a large accelerated filer or an accelerated filer, management’s report was not subject to attestation by the Company’s independent registered public accounting firm pursuant to the rules of the Commission that permit the Company to provide only management’s report in this Form 10-K.

Changes in Internal Control over Financial Reporting

There was no other change 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 December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

DIRECTORS

The following table sets forth, as of the date of this Report, information concerning our Board of Directors (“Board”):

NAME	AGE	POSITION
Dr. Louis F. Centofanti	75	Director; EVP of Strategic Initiatives; President of PF Medical
Mr. S. Robert Cochran	65	Director
Honorable Joe R. Reeder	71	Director
Mr. Larry M. Shelton	65	Chairman of the Board
Mr. Zach P. Wamp	61	Director
Mr. Mark A. Zwecker	68	Director

Each director is elected to serve until the next annual meeting of stockholders.

Director Information

Our directors and executive officers, their ages, the positions with us held by each of them, the periods during which they have served in such positions and a summary of their recent business experience is set forth below. Each of the biographies of the current directors listed below also contains information regarding such person's service as a director, business experience, director positions with other public companies held currently or at any time during the past five years, and the experience, qualifications, attributes and skills that our Board considered in nominating or appointing each of them to serve as one of our directors.

Dr. Louis F. Centofanti

Dr. Centofanti, the founder of the Company and a director of the Company since its inception in 1991, currently holds the position of EVP of Strategic Initiatives. Effective January 26, 2018, Dr. Centofanti was appointed to the position of President of PF Medical and was no longer a member of the Supervisory Board of PF Medical (a position he had held since June 2, 2015). From March 1996 to September 8, 2017 and from February 1991 to September 1995, Dr. Centofanti held the position of President and CEO of the Company. Dr. Centofanti served as Chairman of the Board from the Company's inception in February 1991 until December 16, 2014. In January 2015, Dr. Centofanti was appointed by the U.S. Secretary of Commerce Penny Prizker to serve on the U.S. Department of Commerce's Civil Nuclear Trade Advisory Committee (CINTAC). The CINTAC is composed of industry representatives from the civil nuclear industry and meets periodically throughout the year to discuss the critical trade issues facing the U.S. civil nuclear sector. From 1985 until joining the Company, Dr. Centofanti served as Senior Vice President ("SVP") of USPCI, Inc., a large publicly-held hazardous waste management company, where he was responsible for managing the treatment, reclamation and technical groups within USPCI. In 1981, he and Mark Zwecker founded PPM, Inc. (later sold to USPCI), a hazardous waste management company specializing in treating PCB-contaminated oil. From 1978 to 1981, Dr. Centofanti served as Regional Administrator of the U.S. Department of Energy for the southeastern region of the United States. Dr. Centofanti has a Ph.D. and a M.S. in Chemistry from the University of Michigan, and a B.S. in Chemistry from Youngstown State University.

As founder of Perma-Fix and PPM, Inc., and as a senior executive at USPCI, Dr. Centofanti combines extensive business experience in the waste management industry with a drive for innovative technology which is critical for a waste management company. In addition, his service in the government sector provides a solid foundation for the continuing growth of the Company, particularly within the Company's Nuclear business. Dr. Centofanti's comprehensive understanding of the Company's operations and his extensive knowledge of its history, coupled with his drive for innovation and excellence, positions Dr. Centofanti to optimize our role in this competitive, evolving market, and led the Board to conclude that he should serve as a director.

Mr. S. Robert Cochran

Mr. Cochran, a director since January 2017, has served as President and CEO of CTG, LLC, a company that provides strategic business development support, as well as acquisitions and business/management restructuring activity support, since November 2015. Since November 1, 2018, Mr. Cochran has served as interim President of Westinghouse Government Services through a consulting arrangement with CTG, LLC, in addition to providing previous consulting services to Westinghouse Government Services through CTG, LLC. Since April 2012, Mr. Cochran has been a director of Longenecker & Associates, Inc., a privately held consulting firm that provides highly specialized, fast-response technical-management support to nuclear and environmental industries. From March 2012 to November 2015, Mr. Cochran served as President and Officer Director of CB&I Federal Services, LLC (a subsidiary of Chicago Bridge & Iron Company, NYSE: CBI), which provides mission-critical services primarily to the U.S. federal government. From 2006 to 2011, Mr. Cochran served as President of B&W Technical Service Group, Inc., an operating group of The Babcock & Wilcox Company (NYSE: BW), which provides support to government

and commercial clients, including management and operation of complex high-consequence nuclear facilities, nuclear material processing and manufacturing, classified component manufacturing, engineering, procurement and construction of major capital projects, nuclear safeguards and security, environmental cleanup and remediation, and nuclear-facility deactivation. From 2007 to 2011, Mr. Cochran served as Chairman of the Board of Pantex LLC and B&W Y-12, where he had direct responsibility for the performance and operations associated with nuclear weapons production enterprise. Before joining The Babcock & Wilcox Company, Mr. Cochran worked for more than 20 years in operations and development within the engineering, construction, facilities management and operations, environmental technology, and remediation industries. This experience includes serving as President and CEO of MAGma LLC, a privately-held company that provided management and operational restructuring, strategic development, and acquisition/divestiture services to the public utility, engineering and construction, and Department of Energy business sectors. Additionally, as its SVP, Mr. Cochran led Tyco Infrastructure's development and delivery of services, opening new markets and service areas valued at more than \$1 billion. Mr. Cochran received an executive M.B.A. from the University of Richmond's Robins School of Business and a B.S. from James Madison University.

Mr. Cochran has had an extensive career in solving and overseeing solutions to complex issues involving both domestic and international concerns. In addition, his government related services provide solid experience for the continuing growth of the Company's Treatment and Services Segments. His extensive knowledge and problem-solving experience enhances the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Honorable Joe R. Reeder

Mr. Reeder, a director since 2003, served as Shareholder-in-Charge of the Mid-Atlantic Region (1999-2008) for Greenberg Traurig LLP, the nation's largest U.S.-based law firm, with 38 offices and approximately 2,100 attorneys worldwide. As a principal shareholder in the law firm, Mr. Reeder's clientele includes celebrities, sovereign nations, international corporations, and law firms. As the 14th Undersecretary of the U.S. Army (1993-97), Mr. Reeder also served three years as Chairman of the Panama Canal Commission's Board, overseeing a multibillion-dollar infrastructure program. For the past 18 years, he has served on the Canal's International Advisory Board. He has served on the boards of the National Defense Industry Association, chairing NDIA's Ethics Committee, the Armed Services YMCA, and many other private companies and charitable organizations. After successive 4-year appointments by Virginia Governors Mark Warner and Tim Kaine, Mr. Reeder served seven years as Chairman of two Commonwealth of Virginia military boards, and ten years on the National USO Board. Mr. Reeder was appointed by Governor Terry McAuliffe to the Virginia Military Institute's Board of Visitors (2014), and reappointed in 2018 by new Governor Ralph Northam. Mr. Reeder is also a television commentator on legal and national security issues. Among other corporate positions, he has been a director since September 2005 for ELBIT Systems of America, LLC, a subsidiary of Elbit Systems Ltd. (NASDAQ: ESLT), that provides product and system solutions focusing on defense, homeland security, and commercial aviation. Mr. Reeder served on the Washington First Bank Board from 2004 to 2017, and, since January 2018, has served on the Board of Sandy Spring Bancorp, Inc. (NASDAQ: SASR), and, since April 2018, its Audit Committee.

In May 2018 Mr. Reeder was appointed to the Advisory Council Bid Protest Committee to the United States Court of Federal Claims.

A West Point graduate who served in the 82nd Airborne Division after Ranger School, Mr. Reeder earned his J.D. from the University of Texas, and L.L.M. from Georgetown University.

Mr. Reeder's career has focused on solving and overseeing solutions to complex domestic and international issues. His problem-solving experience has enhanced the Board's ability to address major challenges in the nuclear market, as well as day-to-day corporate challenges. These factors led the Board to conclude that he should serve as a director.

Mr. Larry M. Shelton

Mr. Shelton, a director since July 2006, has also held the position of Chairman of the Board of the Company since December 16, 2014. Mr. Shelton served as the Chief Financial Officer (“CFO”) of S K Hart Management, LLC, a private investment management company from 1999 until August 31, 2018, when he resigned from his duties as CFO to pursue personal interests. Mr. Shelton remains an employee of and provides advisory services to S K Hart Management, LLC. Mr. Shelton served as President of Pony Express Land Development, Inc. (an affiliate of SK Hart Management, LLC), a privately-held land development company, from January 2013 to until August 2017 and has served on its board since December 2005. In March 2012, he was appointed Director and CFO of S K Hart Ranches (PTY) Ltd, a private South African Company involved in agriculture. Mr. Shelton served as a member of the Supervisory Board of PF Medical from April 2014 to December 2016. Mr. Shelton has over 19 years of experience as an executive financial officer for several waste management companies, including as CFO of Envirocare of Utah, Inc. (now Energy Solutions (1995–1999)) and CFO of USPCI, Inc. (1982–1987), a NYSE- listed company. Since July 1989, Mr. Shelton has served on the Board of Subsurface Technologies, Inc., a privately-held company specializing in providing environmentally sound innovative solutions for water well rehabilitation and development. Mr. Shelton has a B.A. in accounting from the University of Oklahoma.

With his years of accounting experience as CFO for various companies, including a number of waste management companies, Mr. Shelton combines extensive industry knowledge and understanding of accounting principles, financial reporting requirements, evaluating and overseeing financial reporting processes and business matters. These factors led the Board to conclude that he should serve as a director.

Mr. Zach P. Wamp

Mr. Wamp, a director since January 2018, is currently the President of Zach Wamp Consulting, a position he has held since 2011. As the President and owner of Zach Wamp Consulting, he has served some of the most prominent companies from Silicon Valley to Wall Street as a business development consultant and advisor. From September 2013 to November 2017, Mr. Wamp chaired the Board of Directors for Chicago Bridge and Iron Federal Services, LLC (a subsidiary of Chicago Bridge & Iron Company, NYSE: CBI, which provides critical services primarily to the U.S. government). From January 1995 to January 2011, Mr. Wamp served as a member of the U.S. House of Representatives from Tennessee's 3^d district. His district included the Oak Ridge National Laboratory, with strong science and research missions from energy to homeland security. Among his many accomplishments, which included various leadership roles in the advancement of education and science, Mr. Wamp was instrumental in the formation and success of the Tennessee Valley Technology Corridor, which created thousands of jobs for Tennesseans in the areas of high-tech research, development, and manufacturing. During his career in the political arena, Mr. Wamp served on several prominent subcommittees during his 14 years on the House Appropriations Committee, including serving as a "ranking member" of the Subcommittee on Military Construction and Veterans Affairs and Related Agencies. Mr. Wamp has been a regular panelist on numerous media outlets and has been featured in a number of national publications effectively articulating sound social and economic policy. Mr. Wamp's business career has also included work in the real estate sector for a number of years as a licensed industrial-commercial real estate broker where he was named Chattanooga's Small Business Person of the Year. He is a founding partner in Learning Blade, the nation's premiere STEM education platform, which is now operating at some level in 28 states.

Mr. Wamp has an extensive career in solving and overseeing solutions to complex issues involving domestic concerns. In addition, his wide-ranging career, particularly with respect to his government-related work, provides solid experience for the continuing growth of the Company's Treatment and Services Segments. His extensive knowledge and problem-solving experience enhances the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Mr. Mark A. Zwecker

Mark Zwecker, a director since the Company's inception in January 1991, currently serves as the CFO and a Board member for JCI US Inc., a telecommunications company and wholly-owned subsidiary of Japan Communications, Inc. (Tokyo Stock Exchange (Securities Code: 9424)), which provides cellular service for M2M (machine to machine) applications. From 2006 to 2013, Mr. Zwecker served as Director of Finance for Communications Security and

Compliance Technologies, Inc., a wholly-owned subsidiary of JCI US Inc. that develops security software products for the mobile workforce. From 1997 to 2006, Mr. Zwecker served as President of ACI Technology, LLC, an IT services provider, and from 1986 to 1998, he served as Vice President of Finance and Administration for American Combustion, Inc., a combustion technology solutions provider. In 1983, with Dr. Centofanti, Mr. Zwecker co-founded a start-up, PPM, Inc., a hazardous waste management company. He remained with PPM, Inc. until its acquisition in 1985 by USPCI. Mr. Zwecker has a B.S. in Industrial and Systems Engineering from the Georgia Institute of Technology and an M.B.A. from Harvard University.

As a director since our inception, Mr. Zwecker's understanding of our business provides valuable insight to the Board. With years of experience in operations and finance for various companies, including a number of waste management companies, Mr. Zwecker combines extensive knowledge of accounting principles, financial reporting rules and regulations, the ability to evaluate financial results, and understanding of financial reporting processes. He has an extensive background in operating complex organizations. Mr. Zwecker's experience and background position him well to serve as a member of our Board. These factors led the Board to conclude that he should serve as a director.

BOARD LEADERSHIP STRUCTURE

We currently separate the roles of Chairman of the Board and CEO. The Board believes that this leadership structure promotes balance between the Board's independent authority to oversee our business, and the CEO and his management team, who manage the business on a day-to-day basis.

The Company does not have a written policy with respect to the separation of the positions of Chairman of the Board and CEO. The Company believes it is important to retain its flexibility to allocate the responsibilities of the offices of the Chairman and CEO in any way that is in the best interests of the Company at a given point in time; therefore, the Company's leadership structure may change in the future as circumstances may dictate.

Mr. Mark Zwecker, a current member of our Board, continues to serve as the Independent Lead Director, a position he has held since February 2010. The Lead Director's role includes:

convening and chairing meetings of the non-employee directors as necessary from time to time and Board meetings in the absence of the Chairman of the Board;
acting as liaison between directors, committee chairs and management;
serving as information sources for directors and management; and
carrying out responsibilities as the Board may delegate from time to time.

AUDIT COMMITTEE

We have a separately designated standing Audit Committee of our Board established in accordance with Section 3(a)(58)(A) of the Exchange Act. The members of the Audit Committee are Mark A. Zwecker (Chairperson), S. Robert Cochran, and Larry M. Shelton, who replaced Dr. Gary G. Kugler as a member of the Audit Committee, effective April 19, 2018. Dr. Kugler elected to retire as a director and did not stand for re-election at the Company's 2018 Annual Meeting of Stockholder's held on July 26, 2018.

Our Board has determined that each of our Audit Committee members is and was independent within the meaning of the rules of the NASDAQ and is an "audit committee financial expert" as defined by Item 407(d)(5)(ii) of Regulation S-K of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The Audit Committee has also discussed with Grant Thornton, LLP, the Company's independent registered accounting firm, the matters required to be discussed by Public Company Accounting Oversight Board ("PCAOB") Auditing Standard No. 16 (Communications with Audit Committee).

BOARD OF DIRECTOR INDEPENDENCE

The Board has determined that each director, other than Dr. Centofanti, is "independent" within the meaning of the applicable NASDAQ rules. Dr. Centofanti is not deemed to be an "independent director" because of his employment as a senior executive of the Company.

COMPENSATION AND STOCK OPTION COMMITTEE

The Compensation and Stock Option Committee ("Compensation Committee") reviews and recommends to the Board the compensation and benefits of all of the Company's officers and reviews general policy matters relating to compensation and benefits of the Company's employees. The Compensation Committee also administers the Company's stock option plans. The Compensation Committee has the sole authority to retain and terminate a compensation consultant, as well as to approve the consultant's fees and other terms of engagement. It also has the authority to obtain advice and assistance from internal or external legal, accounting or other advisors. No compensation consultant was employed during 2018. Members of the Compensation Committee are Larry M. Shelton (Chairperson), Joe R. Reeder, and Mark A. Zwecker, who replaced Dr. Gary G. Kugler as a member of the Compensation Committee, effective April 19, 2018. Effective April 19, 2018, Larry M. Shelton became the Chairperson of the Compensation Committee, which position was previously held by Dr. Gary G. Kugler. None of the members of the Compensation Committee has been an officer or employee of the Company or has had any relationship with the Company requiring disclosure under applicable Securities and Exchange Commission regulations.

CORPORATE GOVERNANCE AND NOMINATING COMMITTEE

We have a separately-designated standing Corporate Governance and Nominating Committee (“Nominating Committee”). Members of the Nominating Committee are Joe R. Reeder (Chairperson), S. Robert Cochran, and Zach P. Wamp, who replaced Dr. Gary G. Kugler as a member effective April 19, 2018. All members of the Nominating Committee are and were “independent” as that term is defined by current NASDAQ listing standards.

The Nominating Committee recommends to the Board candidates to fill vacancies on the Board and the nominees for election as the directors at each annual meeting of stockholders. In making such recommendation, the Nominating Committee takes into account information provided to them from the candidate, as well as the Nominating Committee’s own knowledge and information obtained through inquiries to third parties to the extent the Nominating Committee deems appropriate. The Company’s Amended and Restated Bylaws, as amended (the “Bylaws”), sets forth certain minimum director qualifications to qualify for nomination for elections as a Director. To qualify for nomination or election as a director, an individual must:

- be an individual at least 21 years of age who is not under legal disability;
- have the ability to be present, in person, at all regular and special meetings of the Board;
- not serve on the boards of more than three other publicly held companies;
- satisfy the director qualification requirements of all environmental and nuclear commissions, boards or similar regulatory or law enforcement authorities to which the Corporation is subject so as not to cause the Corporation to fail to satisfy any of the licensing requirements imposed by any such authority;
- not be affiliated with, employed by or a representative of, or have or acquire a material personal involvement with, or material financial interest in, any “Business Competitor” (as defined);
- not have been convicted of a felony or of any misdemeanor involving moral turpitude; and
- have been nominated for election to the Board in accordance with the terms of the Bylaws.

In addition to the minimum director qualifications mentioned above, each candidate’s qualifications are also reviewed to include:

- standards of integrity, personal ethics and value, commitment, and independence of thought and judgment;
- ability to represent the interests of the Company’s stockholders;
- ability to dedicate sufficient time, energy and attention to fulfill the requirements of the position; and
- diversity of skills and experience with respect to accounting and finance, management and leadership, business acumen, vision and strategy, charitable causes, business operations, and industry knowledge.

The Nominating Committee does not assign specific weight to any particular criteria and no particular criterion is necessarily applicable to all prospective nominees. The Nominating Committee does not have a formal policy for the consideration of diversity in identifying nominees for directors; however, the Company believes that the backgrounds

and qualifications of the directors, considered as a group, should provide a significant composite mix of experience, knowledge, and abilities that will allow the Board to fulfill its responsibilities.

Stockholder Nominees

There have been no changes to the stockholder nomination process since the Company's last proxy statement. The procedure for stockholder nominees to the Board is set out below.

The Nominating Committee will consider properly submitted stockholder nominations for candidates for membership on the Board from stockholders who meet each of the requirements set forth in the Bylaws, including, but not limited to, the requirements that any such stockholder own at least 1% of the Company's shares of the Common Stock entitled to vote at the meeting on such election, has held such shares continuously for at least one full year, and continuously holds such shares through and including the time of the annual or special meeting. Nominations of persons for election to the Board may be made at any Annual Meeting of Stockholders, or at any Special Meeting of Stockholders called for the purpose of electing directors. Any stockholder nomination ("Proposed Nominee") must comply with the requirements of the Bylaws and the Proposed Nominee must meet the minimum qualification requirements as discussed above. For a nomination to be made by a stockholder, such stockholder must provide advance written notice to the Nominating Committee, delivered to the Company's principal executive office address (i) in the case of an Annual Meeting of Stockholders, no later than the 90th day nor earlier than the 120th day prior to the anniversary date of the immediately preceding Annual Meeting of Stockholders; and (ii) in the case of a Special Meeting of Stockholders called for the purpose of electing directors, not later than the 10th day following the day on which public disclosure of the date of the Special Meeting of Stockholders was made.

The Nominating Committee will evaluate the qualification of the Proposed Nominee and the Proposed Nominee's disclosure and compliance requirements in accordance with the Company's Bylaws. If the Board, upon the recommendation of the Nominating Committee, determines that a nomination was not made in accordance with the Bylaws, the Chairman of the Meeting shall declare the nomination defective and it will be disregarded.

RESEARCH AND DEVELOPMENT COMMITTEE

Until April 19, 2018, we had a separately-designated standing Research and Development Committee (the "R&D Committee"). The R&D Committee outlined the structures and functions of the Company's research and development strategies, the acquisition and protection of the Company's intellectual property rights and assets, and provided its perspective on such matter to the Board. Members of the R&D Committee included Dr. Louis Centofanti and Dr. Gary G. Kugler. Effective April 19, 2018, the R&D Committee was dissolved. Upon the dissolution of the R&D Committee, all R&D activities are managed and reviewed by senior management and oversight of these activities is conducted by the Board as deemed necessary. The R&D Committee did not have a charter.

STRATEGIC ADVISORY COMMITTEE

We have a separately-designated Strategic Advisory Committee (the "Strategic Committee"). The primary functions of the Strategic Committee are to investigate and evaluate strategic alternatives available to the Company and to work with management on long-range strategic planning and identifying potential new business opportunities. The members of the Strategic Advisory Committee are S. Robert Cochran (Chairperson), Joe R. Reeder, Mark A. Zwecker, and Larry M. Shelton. The Strategic Advisory Committee does not have a charter.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth, as of the date hereof, information concerning our executive officers:

NAME	AGE	POSITION
Mr. Mark Duff	56	President and CEO
Mr. Ben Naccarato	56	CFO, Vice President, and Secretary; CFO of PF Medical
Dr. Louis Centofanti	75	EVP of Strategic Initiatives; President of PF Medical

Mr. Mark Duff

Mr. Mark Duff was appointed President and CEO by the Company's Board on September 8, 2017, succeeding Dr. Louis Centofanti. In September 2016, Mr. Duff was named as the Chief Operating Officer ("COO") of the Company and continued to serve as EVP of the Company, a position he had held since joining the Company in June 2016. Duff has over 30 years of management and technical experience in the U.S Department of Energy ("DOE") and U.S. Department of Defense ("DOD") environmental and construction markets as a corporate officer, senior project manager, co-founder of a consulting firm, and federal employee. For the immediate five years prior to joining the Company in June 2016, Mr. Duff was responsible for the successful completion of over 70 performance-based projects at the Paducah Gaseous Diffusion Plant ("PGDP") in Paducah, KY. At the PGDP, he served as the Project Manager for the Paducah Remediation Contract, which was a five-year project with a total value of \$458 million. Prior to the PGDP project, Mr. Duff was a senior manager supporting Babcock and Wilcox ("B&W"), leading several programs that included building teams to solve complex technical problems. These programs included implementation of the American Recovery and Reinvestment Act ("ARRA") at the DOE Y-12 facility with a \$245 million budget for new cleanup projects completed over a two-year period. During this period, Mr. Duff served as project manager leading a team of senior experts in support of Toshiba Corporation in Tokyo, Japan to integrate United States technology in the recovery of the Fukushima Daiichi Nuclear Reactor disaster. Prior to joining B&W, Mr. Duff served as the president of Safety and Ecology Corporation ("SEC"). As President of SEC, he helped grow the company from \$50 million to \$80 million in annual revenues with significant growth in infrastructure, marketing, and client diversification. Mr. Duff has an MBA from the University of Phoenix and received his B.S. from the University of Alabama.

Mr. Ben Naccarato

Mr. Naccarato has served as the Company's CFO since February 26, 2009. Mr. Naccarato joined the Company in September 2004 and served as Vice President, Finance of the Company's Industrial Segment until May 2006, when he was named Vice President, Corporate Controller/Treasurer. Since July 2015 and December 2015, Mr. Naccarato has served as the CFO of PF Medical and a member of the Management Board of PF Medical, respectively. PF Medical is the Company's majority-owned Polish subsidiary involved in the research and development of a new medical isotope production technology. Mr. Naccarato has over 30 years of experience in senior financial positions in the waste management and used oil industries. From December 2002 to September 2004, Mr. Naccarato was the CFO of a privately held company in the fuel distribution and used waste oil industry. Mr. Naccarato is a graduate of University of Toronto with a Bachelor of Commerce and Finance Degree and is a Chartered Professional Accountant, Certified Management Accountant (CPA, CMA).

Dr. Louis Centofanti

See "Director – Dr. Louis F. Centofanti" in this section for information on Dr. Centofanti.

Certain Relationships

There are no family relationships between any of the directors or executive officers.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act, and the regulations promulgated thereunder require our executive officers and directors and beneficial owners of more than 10% of our Common Stock to file reports of ownership and changes of ownership of our Common Stock with the Securities and Exchange Commission, and to furnish us with copies of all such reports. Based solely on a review of the copies of such reports furnished to us and written information provided to us, we believe that during 2018 none of our executive officers, directors, or beneficial owners of more than 10% of our Common Stock failed to timely file reports under Section 16(a).

Capital Bank–Grawe Gruppe AG ("Capital Bank") has advised us that it is a banking institution regulated by the banking regulations of Austria, which holds shares of our Common Stock as agent on behalf of numerous investors. Capital

Bank has represented that all of its investors are accredited investors under Rule 501 of Regulation D promulgated under the Act. In addition, Capital Bank has advised us that none of its investors, individually or as a group, beneficially own more than 4.9% of our Common Stock as calculated in accordance with Rule 13d-3 of the Exchange Act. Capital Bank has further informed us that its clients (and not Capital Bank) maintain full voting and dispositive power over such shares. Consequently, Capital Bank has advised us that it believes it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of our Common Stock registered in the name of Capital Bank because it has neither voting nor investment power, as such terms are defined in Rule 13d-3, over such shares. Capital Bank has informed us that it does not believe that it is required to file, and has not filed, (a) reports under Section 16(a) of the Exchange Act or (b) either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Capital Bank.

If the representations of, or information provided by Capital Bank, are incorrect or Capital Bank was historically acting on behalf of its investors as a group, rather than on behalf of each investor independent of other investors, then Capital Bank and/or the investor group would have become a beneficial owner of more than 10% of our Common Stock on February 9, 1996, as a result of the acquisition of 1,100 shares of our Preferred Stock that were convertible into a maximum of 256,560 shares of our Common Stock. If either Capital Bank or a group of Capital Bank's investors became a beneficial owner of more than 10% of our Common Stock on February 9, 1996, or at any time thereafter, and thereby required to file reports under Section 16(a) of the Exchange Act, then Capital Bank has failed to file a Form 3 or any Forms 4 or 5 since February 9, 1996. (See "Item 12 - Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matter – Security Ownership of Certain Beneficial Owners" for a discussion of Capital Bank's current record ownership of our securities).

Code of Ethics

Our Code of Ethics applies to all our executive officers and is available on our website at www.perma-fix.com. If any amendments are made to the Code of Ethics or any grants of waivers are made to any provision of the Code of Ethics to any of our executive officers, we will promptly disclose the amendment or waiver and nature of such amendment or waiver on our website at the same web address.

ITEM 11. EXECUTIVE COMPENSATION

Summary Compensation

The following table summarizes the total compensation paid or earned by each of the named executive officers ("NEOs") for the fiscal years ended December 31, 2018 and 2017.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$) ⁽⁴⁾	Non-Equity Incentive Plan Compensation (\$) ⁽⁵⁾	All other Compensation (\$) ⁽⁶⁾	Total Compensation (\$)
Mark Duff ⁽¹⁾ President and CEO	2018	275,125	—	—	—	29,555	304,680
	2017	267,000	—	188,118	—	32,362	487,480
Ben Naccarato Vice President and CFO	2018	229,494	—	—	—	40,732	270,226
	2017	226,552 ⁽²⁾	—	94,059	—	36,706	357,317
Dr. Louis Centofanti ⁽¹⁾	2018	223,400	—	—	—	32,177	255,577

Explanation of Responses:

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EVP of Strategic Initiatives	2017	262,959 ⁽³⁾	—	94,059	—	30,464	387,482
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On September 8, 2017, Mr. Duff was named as President and CEO, succeeding Dr. Louis Centofanti, who retired from the position of President and CEO and was named to the position of EVP of Strategic Initiatives. Since joining⁽¹⁾ the Company (effective June 11, 2016), Mr. Duff earned an annual salary of \$267,000. On April 19, 2018, the Compensation Committee and the Board approved Mr. Duff’s annual to \$280,000 from \$267,000.

Effective April, 20, 2017, the Compensation Committee and the Board approved Mr. Naccarato’s annual salary to⁽²⁾ \$229,494 from \$220,667.

As EVP of Strategic Initiatives, Dr. Centofanti’s annual salary was amended to \$223,400 from \$279,248 effective⁽³⁾ September 8, 2017.

Reflects the aggregate grant date fair value of awards computed in accordance with ASC 718, “Compensation – Stock⁽⁴⁾ Compensation.” Assumptions used in the calculation of this amount are included in “Note 6 – Capital Stock, Stock Plans, Warrants and Stock Based Compensation” to “Notes to Consolidated Financial Statement.”

Represents performance compensation earned under the Company’s MIP with respect to each NEO. The MIP for⁽⁵⁾ each NEO is described under the heading “2018 MIPs.” No compensation was earned by any NEO under his respective MIP for 2018 and 2017.

The amount shown includes a monthly automobile allowance of \$750, insurance premiums (health, disability and⁽⁶⁾ life) paid by the Company on behalf of the executive, and 401(k) matching contributions.

Name	Insurance			Total
	Premium	Auto Allowance	401(k) match	
Mark Duff	\$ 14,430	\$ 9,000	\$ 6,125	\$ 29,555
Ben Naccarato	\$ 27,109	\$ 9,000	\$ 4,623	\$ 40,732
Dr. Louis Centofanti	\$ 18,687	\$ 9,000	\$ 4,490	\$ 32,177

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth unexercised options held by the NEOs as of the fiscal year-end.

Outstanding Equity Awards at December 31, 2018

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) ⁽¹⁾ Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price (\$)	Option Expiration Date
Dr. Louis Centofanti	10,000	40,000	⁽²⁾ —	3.65	7/27/2023
Ben Naccarato	10,000	40,000	⁽²⁾ —	3.65	7/27/2023
Mark Duff	20,000 33,333	80,000 ⁽³⁾ 16,667	⁽²⁾ — ⁽³⁾ —	3.65 3.97	7/27/2023 5/15/2022

Pursuant to the NEO's employment agreements with the Company, each dated September 9, 2017, in the event of a change in control, death of the executive officer, the executive officer terminates his employment for "good reason" or ⁽¹⁾the executive officer is terminated by the Company without cause, each outstanding option and award shall immediately become exercisable in full (see "Employment Agreements" below for further discussion of the exercisability terms of the option under these events) .

⁽²⁾ Incentive stock option granted on July 27, 2017 under the Company's 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

⁽³⁾ Incentive stock option granted on May 15, 2016 under the Company's 2010 Stock Option Plan. The option has a contractual term of six years with one-third yearly vesting over a three-year period.

None of the Company's NEOs exercised options during 2018.

Employment Agreements

Each of Messrs. Duff, Centofanti and Naccarato have entered into employment agreements with the Company (each, an "Employment Agreement" and collectively, the "Employment Agreements"), effective September 8, 2017, with annual base salaries of \$267,000, \$223,400, and \$229,494, respectively. Each annual base salary is subject to adjustment as determined by the Compensation Committee. In addition, each of these executive officers is entitled to participate in the Company's broad-based benefits plans and to certain performance compensation payable under separate MIPs as approved by the Company's Compensation Committee and Board. The Company's Compensation Committee and the Board approved individual 2018 MIPs on January 18, 2018 (which were effective January 1, 2018 and applicable for year 2018) for each of Mark Duff, Dr. Louis Centofanti, and Ben Naccarato (see discussion of the 2018 MIPs below under "2018 MIPs"). No compensation was earned under each of the 2018 MIPs.

Each of the Employment Agreements is effective for three years from September 8, 2017 (the "Initial Term") unless earlier terminated by the Company or by the executive officer. At the end of the Initial Term of each Employment Agreement, each Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, the Company or the executive officer provides written notice not to extend the terms of the Employment Agreement.

Pursuant to the Employment Agreements, if the executive officer's employment is terminated due to death/disability or for cause (as defined in the agreements), the Company will pay to the executive officer or to his estate an amount equal to the sum of any unpaid base salary, accrued unused vacation time through the date of termination, any benefits due to the executive officer under any employee benefit plan (the "Accrued Amounts") and any performance compensation payable pursuant to the MIP.

If the executive officer terminates his employment for "good reason" (as defined in the agreements) or is terminated by the Company without cause (including any such termination for "good reason" or without cause within 24 months after a Change in Control (as defined in the agreement)), the Company will pay the executive officer the Accrued Amounts, two years of full base salary, performance compensation (under the MIP) earned with respect to the fiscal year immediately preceding the date of termination, and an additional year of performance compensation (under the MIP) earned, if not already paid, with respect to the fiscal year immedia