ION GEOPHYSICAL CORP
Form 10-Q
November 02, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

ý QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2018
OR
¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
COMMISSION FILE NUMBER: 1-12691
ION GEOPHYSICAL CORPORATION
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	22-2286646
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2105 CityWest Blvd. Suite 100 Houston, Texas	77042-2839
(Address of principal executive offices)	(Zip Code)

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (281) 933-3339

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ý No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer o	Accelerated filer o
Non-accelerated filer o	Smaller reporting company ý
	Emerging growth company o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.
¨
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No ý
At October 29, 2018, there were 14,002,999 shares of common stock, par value $0.01 per share, outstanding.

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ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
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PART I. FINANCIAL INFORMATION
Item 1. Financial Statements

ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(UNAUDITED)

	September 30, 2018	December 31, 2017
	(In thousands, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 30,043	$ 52,056
Accounts receivable, net	23,624	19,478
Unbilled receivables	25,724	37,304
Inventories	15,129	14,508
Prepaid expenses and other current assets	5,854	7,643
Total current assets	100,374	130,989
Deferred income tax asset	4,058	1,753
Property, plant, equipment and seismic rental equipment, net	49,968	52,153
Multi-client data library, net	83,254	89,300
Goodwill	23,590	24,089
Other assets	2,713	2,785
Total assets	$ 263,957	$ 301,069
LIABILITIES AND EQUITY		
Current liabilities:		
Current maturities of long-term debt	$ 1,335	$ 40,024
Accounts payable	31,872	24,951
Accrued expenses	33,556	38,697
Accrued multi-client data library royalties	28,235	27,035
Deferred revenue	10,327	8,910
Total current liabilities	105,325	139,617
Long-term debt, net of current maturities	119,449	116,720
Other long-term liabilities	12,269	13,926
Total liabilities	237,043	270,263
Equity:		
Common stock, $0.01 par value; authorized 26,666,667 shares; outstanding 14,002,999 and 12,019,701 shares at September 30, 2018 and December 31, 2017, respectively	140	120
Additional paid-in capital	951,811	903,247
Accumulated deficit	(906,749)	(854,921)
Accumulated other comprehensive loss	(19,591)	(18,879)
Total stockholders' equity	25,611	29,567
Noncontrolling interest	1,303	1,239
Total equity	26,914	30,806
Total liabilities and equity	$ 263,957	$ 301,069

See accompanying Footnotes to Unaudited Condensed Consolidated Financial Statements.

ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(UNAUDITED)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(In thousands, except per share data)			
Service revenues	$37,105	$52,615	$77,943	$110,897
Product revenues	10,095	8,480	27,508	28,755
Total net revenues	47,200	61,095	105,451	139,652
Cost of services	25,924	26,392	70,286	73,518
Cost of products	4,801	4,594	13,354	14,306
Gross profit	16,475	30,109	21,811	51,828
Operating expenses:				
Research, development and engineering	5,030	4,396	13,544	11,998
Marketing and sales	5,209	5,645	16,314	15,062
General, administrative and other operating expenses	8,688	10,132	29,564	32,316
Total operating expenses	18,927	20,173	59,422	59,376
Income (loss) from operations	(2,452)	9,936	(37,611)	(7,548)
Interest expense, net	(3,022)	(3,959)	(9,769)	(12,664)
Other income (expense), net	91	722	(616)	(4,154)
Income (loss) before income taxes	(5,383)	6,699	(47,996)	(24,366)
Income tax expense	2,079	1,686	3,305	3,670
Net income (loss)	(7,462)	5,013	(51,301)	(28,036)
Net income attributable to noncontrolling interest	(74)	(78)	(527)	(812)
Net income (loss) attributable to ION	$(7,536)	$4,935	$(51,828)	$(28,848)
Net income (loss) per share:				
Basic	$(0.54)	$0.42	$(3.81)	$(2.43)
Diluted	$(0.54)	$0.41	$(3.81)	$(2.43)
Weighted average number of common shares outstanding:				
Basic	14,003	11,890	13,586	11,862
Diluted	14,003	12,071	13,586	11,862

See accompanying Footnotes to Unaudited Condensed Consolidated Financial Statements.

ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(UNAUDITED)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(In thousands)			
Net income (loss)	$(7,462)	$5,013	$(51,301)	$(28,036)
Other comprehensive loss, net of taxes, as appropriate:				
Foreign currency translation adjustments	43	1,033	(712)	2,749
Comprehensive net income (loss)	(7,419)	6,046	(52,013)	(25,287)
Comprehensive (income) loss, attributable to noncontrolling interest	(74)	(78)	(527)	(812)
Comprehensive net income (loss) attributable to ION	$(7,493)	$5,968	$(52,540)	$(26,099)

See accompanying Footnotes to Unaudited Condensed Consolidated Financial Statements.

ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(UNAUDITED)

	Nine Months Ended September 30,	
	2018	2017
	(In thousands)	
Cash flows from operating activities:		
Net loss	$(51,301)	$(28,036)
Adjustments to reconcile net loss to cash (used in) provided by operating activities:		
Depreciation and amortization (other than multi-client data library)	6,902	13,199
Amortization of multi-client data library	32,544	34,245
Stock-based compensation expense	2,508	1,694
Accrual for loss contingency related to legal proceedings	—	5,000
Deferred income taxes	(2,310)	(900)
Change in operating assets and liabilities:		
Accounts receivable	(4,383)	(18,200)
Unbilled receivables	13,156	(12,398)
Inventories	(646)	831
Accounts payable, accrued expenses and accrued royalties	(9,567)	1,011
Deferred revenue	1,479	7,092
Other assets and liabilities	4,294	6,156
Net cash (used in) provided by operating activities	(7,324)	9,694
Cash flows from investing activities:		
Cash invested in multi-client data library	(19,911)	(16,576)
Purchase of property, plant, equipment and seismic rental assets	(510)	(1,021)
Proceeds from sale of fixed assets and rental assets	197	—
Net cash used in investing activities	(20,224)	(17,597)
Cash flows from financing activities:		
Payments under revolving line of credit	(10,000)	—
Payments on notes payable and long-term debt	(30,071)	(4,320)
Costs associated with issuance of debt	(565)	—
Net proceeds from issuance of stock	46,999	—
Dividend payment to non-controlling interest	(200)	—
Other financing activities	(924)	(257)
Net cash provided by (used in) financing activities	5,239	(4,577)
Effect of change in foreign currency exchange rates on cash, cash equivalents and restricted cash	296	(271)
Net decrease in cash, cash equivalents and restricted cash	(22,013)	(12,751)
Cash, cash equivalents and restricted cash at beginning of period	52,419	53,433
Cash, cash equivalents and restricted cash at end of period	$30,406	$40,682

The following table is a reconciliation of cash and cash equivalents to total cash, cash equivalents, and restricted cash:

	September 30,	
	2018	2017
	(In thousands)	
Cash and cash equivalents	$30,043	$40,225
Restricted cash included in prepaid expenses and other current assets	60	154
Restricted cash included in other long-term assets	303	303
Total cash, cash equivalents, and restricted cash shown in statement of cash flows	$30,406	$40,682

Short-term restricted cash included in prepaid expenses and other current assets and long-term restricted cash included in other assets are primarily used to secure standby and commercial letters of credit.
See accompanying Footnotes to Unaudited Condensed Consolidated Financial Statements.

ION GEOPHYSICAL CORPORATION AND SUBSIDIARIES
FOOTNOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(1) Basis of Presentation

The condensed consolidated balance sheet of ION Geophysical Corporation and its subsidiaries (collectively referred to as the "Company" or "ION," unless the context otherwise requires) at December 31, 2017 has been derived from the Company's audited consolidated financial statements at that date. The condensed consolidated balance sheet at September 30, 2018, and the condensed consolidated statements of operations and comprehensive income (loss) for the three and nine months ended September 30, 2018 and 2017 and the condensed consolidated statements of cash flows for the nine months ended September 30, 2018 and 2017, are unaudited. In the opinion of management, all adjustments (consisting of normal recurring accruals) considered necessary for a fair presentation have been included. The results of operations for the three and nine months ended September 30, 2018, are not necessarily indicative of the operating results for a full year or of future operations.

The Company's financial statements reflect a non-redeemable noncontrolling interest in a majority-owned affiliate which is reported as a separate component of equity in "Noncontrolling interest" in the condensed consolidated balance sheets. The activity for this noncontrolling interest relates to proprietary processing projects in Brazil.

These condensed consolidated financial statements have been prepared using accounting principles generally accepted in the United States for interim financial information and the instructions to Form 10-Q and applicable rules of Regulation S-X of the Securities and Exchange Commission (the "SEC"). Certain information and footnote disclosures normally included in annual financial statements presented in accordance with accounting principles generally accepted in the United States have been omitted. The accompanying condensed consolidated financial statements should be read in conjunction with the Company's Annual Report on Form 10-K as amended for the year ended December 31, 2017.

(2) Recent Accounting Pronouncements

In February 2016, the Financials Account Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02, "Leases (Topic 842)" which introduces the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The guidance will be effective for annual reporting periods beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted. The Company will adopt ASU 2016-02 on January 1, 2019. The Company is currently evaluating its operating leases related to offices, processing centers, warehouse spaces and, to a lesser extent, certain equipment. The Company expects the adoption of the standard will add between $50 million to $60 million in right-of-use assets and lease obligations on its consolidated balance sheet and will not significantly impact it's income statement. The Company plans to elect the practical expedients upon transition which will retain the lease classification for leases that exist prior to the adoption of the standard.

On January 1, 2018, the Company adopted FASB Accounting Standard Codification ("ASC") Topic 606, "Revenue from Contracts with Customers" and all the related amendments using the modified retrospective method. The adoption did not have a material impact to the Company's revenue recognition policy under the previous standard (ASC 605) and adoption of the new standard, ASC 606, did not result in an adjustment to the Company's beginning retained earnings balance.

On January 1, 2018, the Company adopted ASU 2016-18, Statement of Cash Flows - "Restricted Cash (a consensus of the FASB Emerging Issues Task Force) (ASU 2016-18)", using a retrospective transition method to each period presented. The new standard no longer requires the Company to present transfers between cash and cash equivalents and restricted cash in the statement of cash flows. Adoption of the new standard resulted in a decrease of $0.3 million in net cash provided by operating activities as previously reported for the nine months ended September 30, 2018. See the consolidated statement of cash flows above which includes a reconciliation of cash and cash equivalents to total cash, cash equivalents, and restricted cash.

(3) Segment Information

The Company evaluates and reviews its results based on three business segments: E&P Technology & Services, Operations Optimization (formerly referred to as E&P Operations Optimization), and Ocean Bottom Integrated Technologies (formerly referred to as Ocean Bottom Seismic Services). The Company measures segment operating

results based on income (loss) from operations.

The following table is a summary of segment information (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net revenues:				
E&P Technology & Services:				
New Venture	$18,218	$43,542	$40,069	$70,477
Data Library	13,956	5,044	21,629	25,360
Total multi-client revenues	32,174	48,586	61,698	95,837
Imaging Services	4,147	3,468	14,379	13,409
Total	36,321	52,054	76,077	109,246
Operations Optimization:				
Devices	5,356	5,260	14,275	17,929
Optimization Software & Services	5,523	3,781	15,099	12,477
Total	10,879	9,041	29,374	30,406
Ocean Bottom Integrated Technologies	—	—	—	—
Total	$47,200	$61,095	$105,451	$139,652
Gross profit (loss):				
E&P Technology & Services	$12,139	$28,533	$11,626	$44,464
Operations Optimization	5,736	4,055	14,980	15,100
Ocean Bottom Integrated Technologies	(1,400)	(2,479)	(4,795)	(7,736)
Total	$16,475	$30,109	$21,811	$51,828
Gross margin:				
E&P Technology & Services	33%	55%	15%	41%
Operations Optimization	53%	45%	51%	50%
Ocean Bottom Integrated Technologies	—%	—%	—%	—%
Total	35%	49%	21%	37%
Income (loss) from operations:				
E&P Technology & Services	$6,578	$22,695	$(4,422)	$27,952
Operations Optimization	1,963	998	3,992	5,569
Ocean Bottom Integrated Technologies	(2,811)	(4,432)	(8,566)	(12,300)
Support and other	(8,182)	(9,325)	(28,615)	(28,769)
Income (loss) from operations	(2,452)	9,936	(37,611)	(7,548)
Interest expense, net	(3,022)	(3,959)	(9,769)	(12,664)
Other income (expense), net	91	722	(616)	(4,154)
Income (loss) before income taxes	$(5,383)	$6,699	$(47,996)	$(24,366)

(4) Revenue From Contracts With Customers

The Company derives revenue from the sale or license of (i) multi-client and proprietary data, imaging services and E&P Advisors consulting services within its E&P Technologies & Services segment; (ii) seismic data acquisition systems and other seismic equipment, (iii) seismic command and control software systems and software solutions for operations management within its Operations Optimization segment; and (iv) a full suite of technology and services within its Ocean Bottom Integrated Technologies segment. All revenues of the E&P Technology & Services and Ocean Bottom Integrated Technologies segments and the services component of revenues for the Optimization Software & Services group as part of the Operations Optimization segment are classified as services revenues. All other revenues are classified as product revenues.

The Company uses a five-step model to determine proper revenue recognition from customer contracts. Revenue is recognized when (i) a contract is approved by all parties; (ii) the goods or services promised in the contract are

identified; (iii) the consideration we expect to receive in exchange for the goods or services promised is determined; (iv) the consideration is allocated to the goods and services in the contract; and (v) control of the promised goods or services is transferred to the customer. The Company does not disclose the value of contractual future performance obligations such as backlog with an original expected length of one year or less within the footnotes.

Multi-client and Proprietary Surveys, and Imaging and E&P Advisors Services - As multi-client seismic surveys are being designed, acquired or processed (the “New Venture” phase), the Company enters into non-exclusive licensing arrangements with its customers, who pre-fund or underwrite these programs in part. License revenues from these surveys are recognized during the New Venture phase as the seismic data is acquired and/or processed on a proportionate basis as work is performed and control is transferred to the customer. Under this method, the Company recognizes revenue based upon quantifiable measures of progress, such as kilometers acquired or surveys of performance completed to date. Upon completion of a multi-client seismic survey, it is considered “on-the-shelf,” and licenses to the survey data are granted to customers on a non-exclusive basis.

The Company also performs seismic surveys, imaging and other services under contracts to specific customers, whereby the seismic data is owned by those customers. The Company recognizes revenue as the seismic data is acquired and/or processed on a proportionate basis as work is performed. The Company uses quantifiable measures of progress consistent with its multi-client seismic surveys.

Acquisition Systems and Other Seismic Equipment - For sales of seismic data acquisition systems and other seismic equipment, the Company recognizes revenue when control of the goods has transferred to the customer. Transfer of control generally occurs when (i) the Company has a present right to payment; (ii) the customer has legal title to the asset; (iii) the Company has transferred physical possession of the asset; (iv) the customer has significant rewards of ownership; and/or (v) the customer has accepted the asset.

Software - Licenses for the Company’s navigation, survey design and quality control software systems provide the customer with a right to use the software. The Company offers usage-based licenses under which it receives a monthly fee based on the number of vessels and licenses used. For these usage-based licenses, revenue is recognized as the performance obligations are performed over the contract term, which is generally two to five years. In addition to usage-based licenses, the Company offers perpetual software licenses as it exists when made available to the customer. Revenue from these licenses is recognized upfront at the point in time when the software is made available to the customer.

These arrangements generally include the Company providing related services, such as training courses, engineering services and annual software maintenance. The Company allocates consideration to each element of the arrangement based upon directly observable or estimated standalone selling prices. Revenue is recognized for these services as control transfers to the customer over time.

Ocean Bottom Integrated Technologies - The Company recognizes revenue as the seismic data is acquired and control transfers to the customer. The Company uses quantifiable measures of progress consistent with our multi-client surveys. In connection with acquisition contracts, the Company may receive revenues for preparation and mobilization of equipment and personnel, capital improvements to vessels, or demobilization activities. The Company defers the revenues earned and incremental costs incurred that are directly related to these activities and recognizes such revenues and costs over the primary contract term of the acquisition project as we transfer the goods and services to the customer. The Company recognizes the costs of relocating vessels without contracts to more promising market sectors as such costs are incurred.

Revenue by Geographic Area

The following table is a summary of net revenues by geographic area (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Net revenues by geographic area:				
Latin America	$19,910	$34,561	$37,356	$53,318
North America	13,095	9,374	25,452	30,639
Europe	8,202	11,137	19,811	28,201
Asia Pacific	3,718	3,733	11,581	15,318
Africa	1,121	1,187	8,362	2,660
Middle East	717	632	1,907	1,713

Commonwealth of Independent States	437	471	982	7,803
Total	$47,200	$61,095	$105,451	$139,652

See Footnote 3 “Segment Information” of Footnotes to Unaudited Condensed Financial Statements for revenue by segment for the three and nine months ended September 30, 2018 and 2017.

Unbilled Receivables

Unbilled receivables relate to revenues recognized on multi-client surveys, imaging services and Devices equipment repairs on a proportionate basis, and on licensing of multi-client data libraries for which invoices have not yet been presented to the customer. The following table is a summary of unbilled receivables (in thousands):

	September 30, 2018	December 31, 2017
New Venture	$ 20,056	$ 33,183
Imaging Services	4,685	4,121
Devices	983	—
Total	$ 25,724	$ 37,304

The changes in unbilled receivables were as follows (in thousands):

Unbilled Receivables at December 31, 2017	$37,304
Recognition of unbilled receivables	86,212
Revenues billed to customers	(97,792)
Unbilled receivables at September 30, 2018	$25,724

Deferred Revenue

Billing practices are governed by the terms of each contract based upon achievement of milestones or pre-agreed schedules. Billing does not necessarily correlate with revenue recognized on a proportionate basis as work is performed and control is transferred to the customer. Deferred revenue represents cash received in excess of revenue not yet recognized as of the reporting period, but will be recognized in future periods. The following table is a summary of deferred revenues (in thousands):

	September 30, 2018	December 31, 2017
New Venture	$ 7,880	$ 6,548
Imaging Services	271	676
Devices	1,198	633
Optimization Software & Services	978	1,053
Total	$ 10,327	$ 8,910

The changes in deferred revenues were as follows (in thousands):

Deferred revenue at December 31, 2017	$8,910
Cash collected in excess of revenue recognized	21,654
Recognition of deferred revenue [(a)]	(20,237)
Deferred revenue at September 30, 2018	$10,327

[(a)] The majority of deferred revenue recognized relates to Company's Ventures group.

The Company expects to recognize all deferred revenue within the next 12 months.

Credit Risks

At September 30, 2018, the Company had one multinational oil customer with a balance of 29% of its total combined accounts and unbilled receivable balances. The Company had one multinational oil customer that comprised 18% of its total net revenues for the nine months ended September 30, 2018.

The loss of this customer or deterioration in this customer's relationship with the Company could have a material adverse effect on results of operations and financial condition of the Company.

(5) Long-term Debt

The following table is a summary of long-term debt obligations, net (in thousands):

Obligations (in thousands)	September 30, 2018	December 31, 2017
Senior secured second-priority lien notes (maturing December 15, 2021)	$ 120,569	$ 120,569
Senior secured third-priority lien notes (redeemed March 26, 2018)	—	28,497
Revolving line of credit (amended August 16, 2018, maturing August 16, 2023)	—	10,000
Equipment capital leases and other debt	3,384	1,661
Costs associated with issuances of debt	(3,169)	(3,983)
Total	120,784	156,744
Current portion of long-term debt and lease obligations	(1,335)	(40,024)
Non-current portion of long-term debt and lease obligations	$ 119,449	$ 116,720

Revolving Credit Facility

On August 16, 2018, ION Geophysical Corporation and its material U.S. subsidiaries; GX Technology Corporation, ION Exploration Products (U.S.A) and I/O Marine Systems, Inc. (the "Material U.S. Subsidiaries"), along with GX Geoscience Corporation, S. de R.L. de C.V., a limited liability company (Sociedad de Responsibilidad Limitada de Capital Variable) organized under the laws of Mexico, and a subsidiary of the Company (the "Mexican Subsidiary"), (the Material U.S. Subsidiaries and the Mexican Subsidiary are collectively, the "Subsidiary Borrowers", together with ION Geophysical Corporation are the "Borrowers"), the financial institutions party thereto, as lenders, and PNC Bank, National Association ("PNC"), as agent for the lenders, entered into that certain Third Amendment and Joinder to Revolving Credit and Security Agreement (the "Third Amendment"), amending the Revolving Credit and Security Agreement, dated as of August 22, 2014 (as previously amended by the First Amendment to Revolving Credit and Security Agreement, dated as of August 4, 2015 and the Second Amendment to Revolving Credit and Security Agreement, dated as of April 28, 2016, the "Credit Agreement"). For information regarding the terms of the Credit Agreement prior to the Third Amendment, see Footnote 3 to the Financial Statements included in the Company's Annual Report on Form 10-K, as amended for the year ended December 31, 2017. The Credit Agreement, as amended by the First Amendment, the Second Amendment and the Third Amendment is herein called the "Credit Facility"). The Third Amendment amends the Credit Agreement to, among other things:

- extend the maturity date of the Credit Facility by approximately four years (from August 22, 2019 to August 16, 2023), subject to the Company's retirement or extension of the maturity date of its Second Lien Notes, as defined below, which matures on December 15, 2021;
- increase the maximum revolver amount by $10.0 million (from $40.0 million to $50.0 million);
- increase the borrowing base percentage of the net orderly liquidation value as it relates to the multi-client data library (not to exceed $28.5 million, up from the previous maximum of $15.0 million for the multi-client data library component);
- include the eligible billed receivables of the Mexican Subsidiary up to a maximum of $5.0 million in the borrowing base calculation and joins the Mexican Subsidiary as a borrower thereunder (with a maximum exposure of $5.0 million) and require the equity and assets of the Mexican Subsidiary to be pledged to secure obligations under the facility;
- modify the interest rate such that the maximum interest rate remains consistent with the fixed interest rate prior to the Third Amendment (that is, 3.00% per annum for domestic rate loans and 4.00% per annum for LIBOR rate loans), but now lowers the range down to a minimum interest rate of 2.00% for domestic rate loans and 3.00% for LIBOR rate loans based on a leverage ratio for the preceding four-quarter period;
- decrease the minimum excess borrowing availability threshold which (if the Borrowers have minimum excess borrowing availability below any such threshold) triggers the agent's right to exercise dominion over cash and deposit accounts; and
- modify the trigger required to test for compliance with the fixed charges coverage ratio, which is further described below.

The borrowing base under the Credit Facility will increase or decrease monthly using a formula based on certain eligible receivables, eligible inventory and other amounts, including a percentage of the net orderly liquidation value

of the Borrowers' multi-client library. As of September 30, 2018, the borrowing base under the Credit Facility was $42.8 million, and there was no indebtedness under the Credit Facility.

The obligations of Borrowers under the Credit Facility are secured by a first-priority security interest in 100% of the stock of the Subsidiary Borrowers and 65% of the equity interest in ION International Holdings L.P., and by substantially all other assets of the Borrowers. However, the first-priority security interest in the other assets of the Mexican Subsidiary is capped to a maximum exposure of $5.0 million.

The Credit Facility contains covenants that, among other things, limit or prohibit the Borrowers, subject to certain exceptions and qualifications, from incurring additional indebtedness (including capital lease obligations), repurchasing equity, paying dividends or distributions, granting or incurring additional liens on the Borrowers' properties, pledging shares of the Borrowers' subsidiaries, entering into certain merger transactions, entering into transactions with the Company's affiliates, making certain sales or other dispositions of the Borrowers' assets, making certain investments, acquiring other businesses and entering into sale-leaseback transactions with respect to the Borrowers' property.

The Credit Facility requires that the Borrowers maintain a minimum fixed charge coverage ratio of 1.1 to 1.0 as of the end of each fiscal quarter during the existence of a covenant testing trigger event. The fixed charge coverage ratio is defined as the ratio of (i) ION Geophysical Corporation's EBITDA, minus unfunded capital expenditures made during the relevant period, minus distributions (including tax distributions) and dividends made during the relevant period, minus cash taxes paid during the relevant period, to (ii) certain debt payments made during the relevant period. The previous trigger to test for covenant compliance was tied to a total liquidity measure (liquidity less than $7.5 million for five consecutive days or $6.5 million on any given day), and was modified by adding a two-step process based on (i) a minimum excess borrowing availability threshold (excess borrowing availability less than $6.25 million for five consecutive days or $5.0 million on any given day) and (ii) the amount of Borrowers' unencumbered cash maintained in a PNC deposit account (if less than the borrowers' then-outstanding obligations).

At September 30, 2018, ION Geophysical Corporation was in compliance with all of the covenants under the Credit Facility.

The Credit Facility contains customary event of default provisions (including a "change of control" event affecting ION Geophysical Corporation), the occurrence of which could lead to an acceleration of ION Geophysical Corporation's obligations under the Credit Facility.

Senior Secured Notes

As of December 31, 2017, ION Geophysical Corporation's 9.125% Senior Secured Second Priority Notes due December 2021 (the "Second Lien Notes") had an outstanding aggregate principal amount of $120.6 million, and ION Geophysical Corporation's 8.125% Senior Third Priority Notes which were to mature in May 2018 (the "Third Lien Notes") had an outstanding aggregate principal amount of $28.5 million prior to their redemption. In March 2018, ION Geophysical Corporation obtained consent from a majority of the Second Lien Notes holders and from PNC to redeem, in full, the Third Lien Notes prior to their stated maturity. On March 26, 2018, ION Geophysical Corporation redeemed the Third Lien Notes by paying the then outstanding principal amount, plus all accrued and unpaid interest through the redemption date. For a complete discussion of the Third Lien Notes prior to their early redemption, see Footnote 3 to the Financial Statements included in the Company's Annual Report on Form 10-K, as amended for the year ended December 31, 2017.

The Second Lien Notes remain outstanding and are senior secured second-priority obligations guaranteed by the Material U.S. Subsidiaries and the Mexican Subsidiary (each as defined above and herein below, with the reference to the Second Lien Notes, the "Guarantors"). Interest on the Second Lien Notes accrues at the rate of 9.125% per annum and is payable semiannually in arrears on June 15 and December 15 of each year during their term, except that the interest payment otherwise payable on June 15, 2021 will be payable on December 15, 2021.

The April 2016 indenture governing the Second Lien Notes contains certain covenants that, among other things, limits or prohibits ION Geophysical Corporation's ability and the ability of its restricted subsidiaries to take certain actions or permit certain conditions to exist during the term of the Second Lien Notes, including among other things, incurring additional indebtedness, creating liens, paying dividends and making other distributions in respect of ION Geophysical Corporation's capital stock, redeeming ION Geophysical Corporation's capital stock, making investments or certain other restricted payments, selling certain kinds of assets, entering into transactions with affiliates, and effecting mergers or consolidations. These and other restrictive covenants contained in the Second Lien Notes Indenture are subject to certain exceptions and qualifications. All of ION Geophysical Corporation's subsidiaries are currently restricted subsidiaries.

As of September 30, 2018, ION Geophysical Corporation was in compliance with the covenants with respect to the Second Lien Notes.

On or after December 15, 2019, the Company may, on one or more occasions, redeem all or a part of the Second Lien Notes at the redemption prices set forth below, plus accrued and unpaid interest and special interest, if any, on the Second Lien Notes redeemed during the twelve-month period beginning on December 15th of the years indicated below:

Date	Percentage
2019	105.500%
2020	103.500%
2021 and thereafter	100.000%

(6) Net Income (Loss) Per Share

Basic net income (loss) per common share is computed by dividing net income (loss) applicable to common shares by the weighted average number of common shares outstanding during the period. Diluted net income (loss) per common share is determined based on the assumption that dilutive restricted stock and restricted stock unit awards have vested and outstanding dilutive stock options have been exercised and the aggregate proceeds were used to reacquire common stock using the average price of such common stock for the period. The total number of shares issued or reserved for future issuance under outstanding stock options at September 30, 2018 and 2017 was 804,936 and 782,739, respectively, and the total number of shares of restricted stock and shares reserved for restricted stock units outstanding at September 30, 2018 and 2017 was 128,131 and 163,184, respectively. Except for the three months ended September 30, 2017, the outstanding stock options were anti-dilutive for all periods presented, as reflected in the table below.

The following table summarizes the computation of basic and diluted net income (loss) per common share (in thousands, except per share amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Net income (loss) attributable to ION	$(7,536)	$4,935	$(51,828)	$(28,848)
Weighted average number of common shares outstanding	14,003	11,890	13,586	11,862
Effect of dilutive stock awards	—	181	—	—
Weighted average number of diluted common shares outstanding	14,003	12,071	13,586	11,862
Basic net income (loss) per share	$(0.54)	$0.42	$(3.81)	$(2.43)
Diluted net income (loss) per share	$(0.54)	$0.41	$(3.81)	$(2.43)

(7) Income Taxes

The Company maintains a valuation allowance for substantially all of its deferred tax assets. The valuation allowance is calculated in accordance with the provisions of the ASC Topic 740 “Income Taxes,” which requires that a valuation allowance be established or maintained when it is “more likely than not” that all or a portion of deferred tax assets will not be realized. In the event the Company’s expectations of future operating results change, the valuation allowance may need to be adjusted downward.

The tax provision for the nine months ended September 30, 2018 has been calculated using the Company’s overall estimated annual effective tax rate based on projected 2018 full year results. The tax provision includes impacts of the Tax Cut and Jobs Act enacted on December 22, 2017, however, these impacts are minimal due to the Company’s U.S. net operating loss and valuation allowance position. The Company’s effective tax rates for the three months ended September 30, 2018 and 2017 were (38.6)% and 25.2%, respectively. The Company’s effective tax rates for the nine-months ended September 30, 2018 and 2017 were (6.9)% and (15.1)%, respectively. The Company’s effective tax rates for the three and nine months ended September 30, 2018 and 2017 were negatively impacted by the change in valuation allowance related to U.S. operating losses for which the Company cannot currently recognize a tax benefit. The Company’s income tax expense for the nine months ended September 30, 2018 of $3.3 million primarily relates to results from the Company’s non-U.S. businesses.

The Company has approximately $0.4 million of unrecognized tax benefits and does not expect to recognize significant increases in unrecognized tax benefits during the next 12-month period. Interest and penalties, if any, related to unrecognized tax benefits are recorded in income tax expense.

As of September 30, 2018, the Company’s U.S. federal tax returns for 2014 and subsequent years remain subject to examination by tax authorities. In the Company’s foreign tax jurisdictions, tax returns for 2013 and subsequent years

generally remain open to examination.

(8) Litigation

WesternGeco

In June 2009, WesternGeco L.L.C. ("WesternGeco") filed a lawsuit against the Company in the United States District Court for the Southern District of Texas, Houston Division. In the lawsuit, styled WesternGeco L.L.C. v. ION Geophysical Corporation, WesternGeco alleged that the Company had infringed several method and apparatus claims contained in four of its United States patents regarding marine seismic streamer steering devices.

The trial began in July 2012. A verdict was returned by the jury in August 2012, finding that the Company infringed the claims contained in the four patents by supplying its DigiFIN® lateral streamer control units and the related software from the United States and awarded WesternGeco the sum of $105.9 million in damages, consisting of $12.5 million in reasonable royalties and $93.4 million in lost profits.

In June 2013, the presiding judge entered a Memorandum and Order, denying the Company's post-verdict motions that challenged the jury's infringement findings and the damages amount. In the Memorandum and Order, the judge also ruled that WesternGeco was entitled to be awarded supplemental damages for the additional DigiFIN units that were supplied from the United States before and after the trial that were not included in the jury verdict due to the timing of the trial. In October 2013, the judge entered another Memorandum and Order, ruling on the number of DigiFIN units that were subject to supplemental damages and also ruling that the supplemental damages applicable to the additional units were to be calculated by adding together the jury's previous reasonable royalty and lost profits damages awards per unit, resulting in supplemental damages of $73.1 million.

In April 2014, the judge entered another Order, ruling that lost profits should not have been included in the calculation of supplemental damages in the October 2013 Memorandum and Order and reducing the supplemental damages award in the case from $73.1 million to $9.4 million. In the Order, the judge also further reduced the damages awarded in the case by $3.0 million to reflect a settlement and license that WesternGeco entered into with a customer of the Company that had purchased and used DigiFIN units that were also included in the damage amounts awarded against the Company.

In May 2014, the judge signed and entered a Final Judgment against the Company in the amount of $123.8 million. The Final Judgment also included an injunction that enjoins the Company, its agents and anyone acting in concert with it, from supplying in or from the United States the DigiFIN product or any parts unique to the DigiFIN product, or any instrumentality no more than colorably different from any of these products or parts, for combination outside of the United States. The Company has conducted its business in compliance with the District Court's orders in the case, and the Company has reorganized its operations such that it no longer supplies the DigiFIN product or any parts unique to the DigiFIN product in or from the United States.

The Company and WesternGeco each appealed the Final Judgment to the United States Court of Appeals for the Federal Circuit in Washington, D.C. (the "Court of Appeals"). On July 2, 2015, the Court of Appeals reversed in part the Final Judgment of the District Court, holding the District Court erred by including lost profits in the Final Judgment. Lost profits were $93.4 million and prejudgment interest on lost profits was approximately $10.9 million of the $123.8 million Final Judgment. Pre-judgment interest on the lost profits portion will be treated in the same way as the lost profits. Post-judgment interest will likewise be treated in the same fashion. On July 29, 2015, WesternGeco filed a petition for rehearing en banc before the Court of Appeals. On October 30, 2015 the Court of Appeals denied WesternGeco's petition for rehearing en banc.

As previously disclosed, the Company recorded a loss contingency accrual of $123.8 million. As a result of the reversal by the Court of Appeals, as of June 30, 2015, the Company reduced its loss contingency accrual to $22.0 million.

On February 26, 2016, WesternGeco filed a petition for writ of certiorari by the Supreme Court. The Company filed its response on April 27, 2016. Subsequently, on June 20, 2016, the Supreme Court vacated the Court of Appeals' ruling although it did not address the lost profits question at that time. Rather, in light of the changes in case law regarding the standard of proof for willfulness in the Halo and Stryker cases, the Supreme Court indicated that the case should be remanded to the Court of Appeals for a determination of whether or not the willfulness determination by the District Court was appropriate.

On October 14, 2016, the Court of Appeals issued a mandate returning the case to the District Court for consideration of whether or not additional damages for willfulness were appropriate.

On November 14, 2016, the District Court ordered the sureties to pay principal and interest on the royalty damages previously awarded and declined to issue a final judgment until after consideration of whether enhanced damages for willfulness would be awarded. While the Company disagreed with the decision by the District Court ordering payment of the royalty damages and interest without a final judgment, on November 25, 2016, the Company paid WesternGeco the $20.8 million due pursuant to the order, at which point the Company reduced its loss contingency accrual to zero.

On March 14, 2017, the District Court held a hearing on whether or not additional damages for willfulness would be payable. The Judge found that the Company's infringement was willful, based on his perception that the Company did not adequately investigate the scope of the patents, and the Company's conduct during trial. However, in his ruling at the hearing, he limited enhanced damages to $5.0 million because it was a "close case," there was no evidence of copying, and the Company was simply acting as a competitor in a capitalist marketplace. The District Court also ordered the appeal bond to be released and discharged. The Court's findings and ruling were memorialized in an order issued on May 16, 2017. On June 30, 2017, WesternGeco and the Company jointly agreed that neither party would appeal the District Court's award of $5.0 million in enhanced damages. The parties also agreed that the $5.0 million would be paid over the course of 12 months. This agreement was memorialized by the court in an order issued on July 26, 2017. Upon assessment of the $5.0 million in enhanced damages, the Company accrued $5.0 million in the first quarter of 2017. As the Company has made the payments, the accrual has been adjusted, and as of September 30, 2018, the loss contingency accrual was zero.

WesternGeco filed a second petition for writ of certiorari in the U.S. Supreme Court on February 17, 2017, appealing the lost profits issue again. The Company filed its response to WesternGeco's second attempt to appeal to the Supreme Court the lost profits issue, raising both the substantive matters the Company addressed by opposing WesternGeco's first petition, and also advancing a procedural argument that WesternGeco could not raise the same issue for a second time in a second petition for certiorari. On May 30, 2017, the Supreme Court called for the views of the U.S. Solicitor General regarding whether or not to grant certiorari. The Company and WesternGeco each met with the Solicitor General's office in late July 2017. On December 6, 2017, the Solicitor General filed its brief, and took the position that the Supreme Court ought to grant certiorari. On January 12, 2018, the Supreme Court granted certiorari as to whether the Court of Appeals erred in holding that lost profits arising from use of prohibited combinations occurring outside of the United States are categorically unavailable in cases where patent infringement is proven under 35 U.S.C. § 271(f)(2) (the specific statute under which the Company was ultimately held to have infringed WesternGeco's patents and upon which the District Court and Court of Appeals relied in entering their final rulings).

The Supreme Court heard oral arguments on April 16, 2018. At oral arguments, the Company argued that the Court of Appeals' decision that eliminated lost profits ought to be affirmed. WesternGeco and the Solicitor General argued that the Court of Appeals' decision that eliminated lost profits ought to be reversed.

On June 22, 2018, the Supreme Court reversed the judgment of the Court of Appeals, held that the award of lost profits to WesternGeco by the District Court was a permissible application of Section 284 of the Patent Act, and remanded the case back to the Circuit Court for further proceedings consistent with its (the Supreme Court's) opinion. On July 24, 2018, the Supreme Court issued the judgment that returned the case to the Court of Appeals.

At the Court of Appeals, in the case leading up to the Supreme Court, the Company presented multiple arguments as to why the District Court's award of lost profits was improper. The lost profits damages awarded by the District Court were based on the use of the Company's products by our customers outside of the United States. The Company argued at the Court of Appeals, and at the Supreme Court, that, as a matter of law, WesternGeco cannot recoup lost profits for the overseas use of the Company's products. This issue, decided in favor of WesternGeco in the recent Supreme Court opinion, was the only issue reached by the Supreme Court in that decision.

The Company also argued in the Court of Appeals that, under the jury instructions given in our case, the jury was required to find that the Company had been a direct competitor of WesternGeco in the survey markets where WesternGeco lost profits in order for WesternGeco to recoup them. Because the Court of Appeals ruled in favor of the Company on the first argument, and overturned the award of lost profits on that basis, the Court of Appeals did not rule on the Company's "direct competitor" argument, and that argument was not presented to the Supreme Court for review. Thus, while the Supreme Court overturned the Court of Appeals' decision that WesternGeco should not be allowed to recover foreign lost profits under the Patent Act, the Supreme Court did not order the Company to pay any amount with respect to lost profits, but rather remanded the case back to the Court of Appeals for further consideration of whether lost profits are payable by the Company in this case.

On July 25, 2018, the Company filed a motion for leave to file supplemental briefing in the Court of Appeals, and concurrently, filed a brief arguing that the judgment of the District Court as to both lost profits and reasonable royalties should be vacated, and that the case should be remanded to the District Court for a new determination on

damages. On July 27, 2018, the Court of Appeals vacated its September 21, 2016 judgment with respect to damages, and ordered WesternGeco and the Company to submit supplemental briefing on what relief is appropriate in light of the Supreme Court's decision. This order rendered the Company's motion for leave to submit briefing moot, and, accordingly, the Court of Appeals denied the Company's motion as moot. The Company and WesternGeco each submitted briefing in accordance with the Court of Appeals' order (with the last brief being filed with the Court of Appeals on September 7, 2018).

Other proceedings may have an impact on WesternGeco's ability to recover lost profits damages and reasonable royalties even if the Company does not prevail on the "direct competitor" argument in the Court of Appeals, and were addressed, along with the direct competitor argument, in the parties' briefing to the Court of Appeals (further described below). In particular, the Company was a party to a challenge to the validity of several of WesternGeco's patent claims by means of an Inter Partes Review ("IPR") with the Patent Trial and Appeal Board ("PTAB"). While the above-described lawsuit was pending on appeal, the PTAB invalidated four of the six patent claims that formed the basis for the jury verdict in the lawsuit. WesternGeco appealed that decision to the Court of Appeals, which heard the Company's and WesternGeco's arguments on January 23, 2018. The Court of Appeals affirmed the PTAB's invalidation of the patents on May 7, 2018, and on July 16, 2018, the Court of Appeals denied WesternGeco's petition for a panel rehearing and a rehearing en banc. This decision by the Court of Appeals may provide a separate ground for reducing or vacating any lost-profits or reasonable royalty award in the lawsuit.

WesternGeco argued, in its pending briefs before the Court of Appeals, that the only issue that remains to be decided is whether lost profits are unavailable to WesternGeco due to the Company's "direct competitor" argument, and argued that the invalidation of four of its six patent claims by the Court of Appeals (which invalidation WesternGeco intends to appeal to the Supreme Court) should have no effect on lost profits or on the royalty award already paid by the Company. WesternGeco also argued that lost profits should be available notwithstanding the Company's "direct competitor" argument.

The Company argued that lost profits are not available on the basis of the "direct competitor" argument, that the Court of Appeals' affirmation that four of the six patent claims at issue are invalid has a preclusive effect on WesternGeco's damages claims, and that the Court of Appeals should order a new trial as to the royalty damages already paid by ION. The Company argued, in the alternative, that if the Court of Appeals does not find the Company's "direct competitor" argument persuasive, the Court of Appeals should nonetheless vacate the District Court's award of royalty damages and lost profits damages and order a new trial as to both royalty damages and lost profits.

On October 19, 2018, the Court of Appeals scheduled oral arguments for the issues raised by the Company and WesternGeco in their briefs pending before that court. Oral arguments are scheduled to take place on November 16, 2018.

The Company may not ultimately prevail in any of the appeals processes noted above and the Company could be required to pay some or all of the lost profits that were awarded by the District Court if the judgment of the District Court is upheld by the Court of Appeals on remand, or if a new trial is granted and a new judgment issues. The Company's assessment that it does not have a loss contingency may change in the future due to developments at the Supreme Court, Court of Appeals, or District Court, and other events, such as changes in applicable law, and such reassessment could lead to the determination that an additional loss contingency is probable, which could have a material effect on the Company's business, financial condition and results of operations. The Company's assessments disclosed in this Quarterly Report on Form 10-Q or elsewhere are based on currently available information and involve elements of judgment and significant uncertainties.

Other Litigation

The Company has been named in various other lawsuits or threatened actions that are incidental to its ordinary business. Litigation is inherently unpredictable. Any claims against the Company, whether meritorious or not, could be time-consuming, cause the Company to incur costs and expenses, require significant amounts of management time and result in the diversion of significant operational resources. The results of these lawsuits and actions cannot be predicted with certainty. The Company currently believes that the ultimate resolution of these matters will not have a material adverse effect on our financial condition or results of operations.

(9) Other Expense, Net

The following table is a summary of other expense, net (in thousands):

	Three Months Ended September 30,	Nine Months Ended September 30,

	2018	2017	2018	2017
Accrual for loss related to legal proceedings (Footnote 8)	$—	$—	$—	$(5,000)
Other income (expense), net	91	722	(616)	846
Total other expense, net	$91	$722	$(616)	$(4,154)

(10) Inventories

The following table is a summary of inventories (in thousands):	September 30, 2018	December 31, 2017
Raw materials and subassemblies	$ 20,910	$ 20,448
Work-in-process	1,070	1,146
Finished goods	7,986	7,953
Reserve for excess and obsolete inventories	(14,837)	(15,039)
Total	$ 15,129	$ 14,508

(11) Accumulated Other Comprehensive Loss

The following table is a summary of changes in accumulated other comprehensive loss by component (in thousands):

	Foreign currency translation adjustments
Accumulated other comprehensive loss at December 31, 2017	$ (18,879)
Net current-period other comprehensive income	(712)
Accumulated other comprehensive loss at September 30, 2018	$ (19,591)

(a) Represents the impact of foreign currency translation adjustments, primarily due to the devaluation of the British Pound Sterling ("GBP") on the Company's GBP-denominated balances, primarily in the Company's Optimization Software & Services group

(12) Supplemental Cash Flow Information and Non-cash Activity

The following table is a summary of cash paid for Interest and Income taxes and non-cash items from investing and financing activities (in thousands):

	Nine Months Ended September 30,	
	2018	2017
Cash paid during the period for:		
Interest	$6,733	$7,273
Income taxes	2,257	3,756
Non-cash items from investing and financing activities:		
Purchases of computer equipment financed through capital leases	3,298	—
Investment in multi-client data library in accounts payable and accrued expenses	6,657	8,485

(13) Fair Value of Financial Instruments

Authoritative guidance on fair value measurements defines fair value, establishes a framework for measuring fair value and stipulates the related disclosure requirements. The Company follows a three-level hierarchy, under which the fair value hierarchy prioritizes the inputs used to measure fair value into three broad levels, moving from quoted prices in active markets in (Level 1) to unobservable inputs in (Level 3).

The carrying amounts of the Company's debt as of September 30, 2018 and December 31, 2017 were $124.0 million and $160.7 million, respectively, compared to its fair values of $124.0 million and $158.2 million as of September 30, 2018 and December 31, 2017, respectively. The fair value of the debt was calculated using a readily observable price (Level 1).

Fair Value of Other Financial Instruments. Due to their highly liquid nature, the amount of the Company's other financial instruments, including cash and cash equivalents, accounts and unbilled receivables, notes receivable, accounts payable, and accrued multi-client data library royalties, represent their approximate fair value.

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(14) Stockholder's Equity and Stock-Based Compensation Expense

Public Equity Offering

On February 21, 2018, the Company announced its successful completion of a public equity offering. The Company issued and sold 1,820,000 shares of common stock at a public offering price of $27.50 per share, and warrants to purchase an additional 1,820,000 shares of the Company's common stock. The net proceeds from this offering were $47.0 million, including transaction expenses. A portion of the net proceeds were used to retire the Company's $28.5 million Third Lien Notes in March 2018 (several weeks before their maturity date). The warrants have an exercise price of $33.60 per share, are immediately exercisable and expire on March 21, 2019. If the warrants are exercised in full prior to their expiration, the Company would receive additional proceeds of $61.2 million, excluding underwriter fees and other transaction expenses.

Stock-Based Compensation

The total number of shares issued or reserved for future issuance under outstanding stock options at September 30, 2018 and 2017 was 804,936 and 782,739, respectively, and the total number of shares of restricted stock and shares reserved for restricted stock units outstanding at September 30, 2018 and 2017 was 128,131 and 163,184, respectively. The total number of stock appreciation rights awards outstanding at September 30, 2018 and 2017 was 530,865 and 1,416,133, respectively. The following table presents a summary of the activity related to stock options, restricted stock, restricted stock unit awards and stock appreciation rights awards for the nine months ended September 30, 2018:

	Stock Options	Restricted Stock and Unit Awards	Stock Appreciation Rights
	Number of Shares		
Outstanding at December 31, 2017	890,341	201,702	565,864
Granted	10,000	66,773	—
Stock options and stock appreciation rights exercised/restricted stock and unit awards vested	(70,086)	(137,844)	(34,999)
Cancelled/forfeited	(25,319)	(2,500)	—
Outstanding at September 30, 2018	804,936	128,131	530,865

Stock-based compensation expense recognized for the nine months ended September 30, 2018 and 2017, totaled $2.5 million and $1.7 million, respectively. Stock appreciation rights expense recognized for the nine months ended September 30, 2018 and 2017, totaled $2.8 million and $0.5 million, respectively.

(15) Condensed Consolidating Financial Information

The Second Lien Notes were issued by ION Geophysical Corporation and are guaranteed by Guarantors, all of which are wholly-owned subsidiaries. The Guarantors have fully and unconditionally guaranteed the payment obligations of ION Geophysical Corporation with respect to the Second Lien Notes. In August 2018, as part of the Company entering into the Third Amendment to its Credit Agreement, the Company joined the Mexican Subsidiary as a guarantor with respect to the Second Lien Notes. All periods presented below have been updated to include the Mexican Subsidiary within The Guarantors column. The following condensed consolidating financial information presents the results of operations, financial position and cash flows for:

- ION Geophysical Corporation and the Guarantors (in each case, reflecting investments in subsidiaries utilizing the equity method of accounting).
- All other subsidiaries of ION Geophysical Corporation that are not Guarantors.
- The consolidating adjustments necessary to present ION Geophysical Corporation's results on a consolidated basis.

This condensed consolidating financial information should be read in conjunction with the accompanying consolidated financial statements and footnotes. For additional information pertaining to the Notes, See Item 2. "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II of this Form 10-Q.

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Balance Sheet	September 30, 2018 ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
ASSETS					
Current assets:					
Cash and cash equivalents	$20,553	$18	$9,472	$—	$30,043
Accounts receivable, net	8	15,101	8,515	—	23,624
Unbilled receivables	—	14,326	11,398	—	25,724
Inventories	—	9,421	5,708	—	15,129
Prepaid expenses and other current assets	2,107	1,211	2,536	—	5,854
Total current assets	22,668	40,077	37,629	—	100,374
Deferred income tax asset	1,264	2,645	149	—	4,058
Property, plant, equipment and seismic rental equipment, net	375	9,155	40,438	—	49,968
Multi-client data library, net	—	75,631	7,623	—	83,254
Investment in subsidiaries	812,068	261,875	—	(1,073,943)	—
Goodwill	—	—	23,590	—	23,590
Intercompany receivables	—	271,410	66,287	(337,697)	—
Other assets	1,708	935	70	—	2,713
Total assets	$838,083	$661,728	$175,786	$(1,411,640)	$263,957
LIABILITIES AND EQUITY					
Current liabilities:					
Current maturities of long-term debt	$—	$1,335	$—	$—	$1,335
Accounts payable	3,166	25,825	2,881	—	31,872
Accrued expenses	13,356	11,088	9,112	—	33,556
Accrued multi-client data library royalties	—	28,020	215	—	28,235
Deferred revenue	—	7,507	2,820	—	10,327
Total current liabilities	16,522	73,775	15,028	—	105,325
Long-term debt, net of current maturities	117,400	2,049	—	—	119,449
Intercompany payables	678,114	—	—	(678,114)	—
Other long-term liabilities	436	5,815	6,018	—	12,269
Total liabilities	812,472	81,639	21,046	(678,114)	237,043
Equity:					
Common stock	140	290,460	47,776	(338,236)	140
Additional paid-in capital	951,811	180,700	203,907	(384,607)	951,811
Accumulated earnings (deficit)	(906,749)	365,725	1,973	(367,698)	(906,749)
Accumulated other comprehensive income (loss)	(19,591)	4,324	(20,923)	16,599	(19,591)
Due from ION Geophysical Corporation	—	(261,120)	(79,296)	340,416	—
Total stockholders' equity	25,611	580,089	153,437	(733,526)	25,611
Noncontrolling interest	—	—	1,303	—	1,303
Total equity	25,611	580,089	154,740	(733,526)	26,914
Total liabilities and equity	$838,083	$661,728	$175,786	$(1,411,640)	$263,957

Balance Sheet	December 31, 2017				
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
ASSETS					
Current assets:					
Cash and cash equivalents	$39,344	$66	$12,646	$—	$52,056
Accounts receivable, net	50	12,496	6,932	—	19,478
Unbilled receivables	—	34,484	2,820	—	37,304
Inventories	—	8,686	5,822	—	14,508
Prepaid expenses and other current assets	2,427	769	4,447	—	7,643
Total current assets	41,821	56,501	32,667	—	130,989
Deferred income tax asset	1,264	336	153	—	1,753
Property, plant, equipment and seismic rental equipment, net	511	7,170	44,472	—	52,153
Multi-client data library, net	—	81,442	7,858	—	89,300
Investment in subsidiaries	753,045	321,934	—	(1,074,979)	—
Goodwill	—	—	24,089	—	24,089
Intercompany receivables	—	225,144	56,633	(281,777)	—
Other assets	686	1,811	288	—	2,785
Total assets	$797,327	$694,338	$166,160	$(1,356,756)	$301,069
LIABILITIES AND EQUITY					
Current liabilities:					
Current maturities of long-term debt	$39,774	$250	$—	$—	$40,024
Accounts payable	1,774	20,982	2,195	—	24,951
Accrued expenses	12,284	16,957	9,456	—	38,697
Accrued multi-client data library royalties	—	26,824	211	—	27,035
Deferred revenue	—	7,231	1,679	—	8,910
Total current liabilities	53,832	72,244	13,541	—	139,617
Long-term debt, net of current maturities	116,691	29	—	—	116,720
Intercompany payables	596,783	—	—	(596,783)	—
Other long-term liabilities	454	6,084	7,388	—	13,926
Total liabilities	767,760	78,357	20,929	(596,783)	270,263
Equity:					
Common stock	120	290,460	49,394	(339,854)	120
Additional paid-in capital	903,247	180,701	202,290	(382,991)	903,247
Accumulated earnings (deficit)	(854,921)	376,690	(9,247)	(367,443)	(854,921)
Accumulated other comprehensive income (loss)	(18,879)	4,372	(19,681)	15,309	(18,879)
Due from ION Geophysical Corporation	—	(236,242)	(78,764)	315,006	—
Total stockholders' equity	29,567	615,981	143,992	(759,973)	29,567
Noncontrolling interest	—	—	1,239	—	1,239
Total equity	29,567	615,981	145,231	(759,973)	30,806
Total liabilities and equity	$797,327	$694,338	$166,160	$(1,356,756)	$301,069

Income Statement	Three Months Ended September 30, 2018				
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
Net revenues	$—	$ 39,211	$ 7,989	$ —	$ 47,200
Cost of sales	—	26,328	4,397	—	30,725
Gross profit	—	12,883	3,592	—	16,475
Total operating expenses	7,349	7,911	3,667	—	18,927
Income (loss) from operations	(7,349)	4,972	(75)	—	(2,452)
Interest expense, net	(3,046)	(7)	31	—	(3,022)
Intercompany interest, net	265	(3,649)	3,384	—	—
Equity in earnings (losses) of investments	2,291	(301)	—	(1,990)	—
Other income (expense)	19	(2)	74	—	91
Net income (loss) before income taxes	(7,820)	1,013	3,414	(1,990)	(5,383)
Income tax expense (benefit)	(284)	(2,358)	4,721	—	2,079
Net income (loss)	(7,536)	3,371	(1,307)	(1,990)	(7,462)
Net income attributable to noncontrolling interest	—	—	(74)	—	(74)
Net income (loss) attributable to ION	$(7,536)	$ 3,371	$ (1,381)	(1,990)	$ (7,536)
Comprehensive net income	$(7,493)	$ 3,370	$ 11,382	$ (14,678)	$ (7,419)
Comprehensive income attributable to noncontrolling interest	—	—	(74)	—	(74)
Comprehensive net income (loss) attributable to ION	$(7,493)	$ 3,370	$ 11,308	$ (14,678)	$ (7,493)

Income Statement	Three Months Ended September 30, 2017				
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
Net revenues	$—	$ 50,366	$ 10,729	$ —	$ 61,095
Cost of sales	—	22,335	8,651	—	30,986
Gross profit	—	28,031	2,078	—	30,109
Total operating expenses	8,349	7,877	3,947	—	20,173
Income (loss) from operations	(8,349)	20,154	(1,869)	—	9,936
Interest expense, net	(4,054)	36	59	—	(3,959)
Intercompany interest, net	259	(1,603)	1,344	—	—
Equity in earnings (losses) of investments	17,097	(11,496)	—	(5,601)	—
Other income (expense)	19	(49)	752	—	722
Net income before income taxes	4,972	7,042	286	(5,601)	6,699
Income tax expense	37	865	784	—	1,686
Net income (loss)	4,935	6,177	(498)	(5,601)	5,013
Net income attributable to noncontrolling interest	—	—	(78)	—	(78)
Net income (loss) attributable to ION	$4,935	$ 6,177	$ (576)	(5,601)	$ 4,935
Comprehensive net income	$5,968	$ 6,190	$ 448	$ (6,560)	$ 6,046
Comprehensive income attributable to noncontrolling interest	—	—	(78)	—	(78)
Comprehensive net income attributable to ION	$5,968	$ 6,190	$ 370	$ (6,560)	$ 5,968

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	Nine Months Ended September 30, 2018				
Income Statement	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
Net revenues	$—	$ 63,465	$ 41,986	$ —	$ 105,451
Cost of sales	—	60,869	22,771	—	83,640
Gross profit	—	2,596	19,215	—	21,811
Total operating expenses	26,592	22,050	10,780	—	59,422
Income (loss) from operations	(26,592)	(19,454)	8,435	—	(37,611)
Interest expense, net	(9,876)	(20)	127	—	(9,769)
Intercompany interest, net	842	(8,779)	7,937	—	—
Equity in earnings (losses) of investments	(13,826)	14,081	—	(255)	—
Other income (expense)	(206)	66	(476)	—	(616)
Net income (loss) before income taxes	(49,658)	(14,106)	16,023	(255)	(47,996)
Income tax expense (benefit)	2,170	(3,141)	4,276	—	3,305
Net income (loss)	(51,828)	(10,965)	11,747	(255)	(51,301)
Net income attributable to noncontrolling interest	—	—	(527)	—	(527)
Net income (loss) attributable to ION	$(51,828)	$(10,965)	11,220	$ (255)	(51,828)
Comprehensive net income (loss)	$(52,540)	$(11,013)	$ 10,505	$ 1,035	$ (52,013)
Comprehensive income attributable to noncontrolling interest	—	—	(527)	—	(527)
Comprehensive net income (loss) attributable to ION	$(52,540)	$(11,013)	$ 9,978	$ 1,035	$ (52,540)

	Nine Months Ended September 30, 2017				
Income Statement	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Consolidating Adjustments	Total Consolidated
	(In thousands)				
Net revenues	$—	$ 99,750	$ 39,902	$ —	$ 139,652
Cost of sales	—	62,684	25,140	—	87,824
Gross profit	—	37,066	14,762	—	51,828
Total operating expenses	25,761	20,774	12,841	—	59,376
Income (loss) from operations	(25,761)	16,292	1,921	—	(7,548)
Interest expense, net	(12,697)	(60)	93	—	(12,664)
Intercompany interest, net	852	(4,743)	3,891	—	—
Equity in earnings of investments	13,963	6,357	—	(20,320)	—
Other income (expense)	(5,068)	(396)	1,310	—	(4,154)
Net income (loss) before income taxes	(28,711)	17,450	7,215	(20,320)	(24,366)
Income tax expense	137	475	3,058	—	3,670
Net income (loss)	(28,848)	16,975	4,157	(20,320)	(28,036)
Net income attributable to noncontrolling interests	—	—	(812)	—	(812)
Net income (loss) applicable to ION	$(28,848)	16,975	$ 3,345	$ (20,320)	$ (28,848)
Comprehensive net income (loss)	$(27,175)	$ 16,940	$ 6,197	$ (21,249)	$ (25,287)
Comprehensive income attributable to noncontrolling interest	—	—	(812)	—	(812)
Comprehensive net income (loss) attributable to ION	$(27,175)	$ 16,940	$ 5,385	$ (21,249)	$ (26,099)

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Statement of Cash Flows	Nine Months Ended September 30, 2018			
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Total Consolidated
	(In thousands)			
Cash flows from operating activities:				
Net cash provided by (used in) operating activities	$(32,495)	$ 28,151	$ (2,980)	$ (7,324)
Cash flows from investing activities:				
Cash invested in multi-client data library	—	(17,427)	(2,484)	(19,911)
Purchase of property, plant, equipment and seismic rental equipment	(282)	(21)	(207)	(510)
Proceeds from sale of fixed assets and rental assets	—	112	85	197
Net cash used in investing activities	(282)	(17,336)	(2,606)	(20,224)
Cash flows from financing activities:				
Payments under revolving line of credit	(10,000)	—	—	(10,000)
Payments on notes payable and long-term debt	(29,879)	(192)	—	(30,071)
Costs associated with issuance of debt	(565)	—	—	(565)
Intercompany lending	8,555	(10,671)	2,116	—
Net proceeds from issuance of stock	46,999	—	—	46,999
Dividend payment to non-controlling interest	(200)	—	—	(200)
Other financing activities	(924)	—	—	(924)
Net cash provided by (used in) financing activities	13,986	(10,863)	2,116	5,239
Effect of change in foreign currency exchange rates on cash, cash equivalents and restricted cash	—	—	296	296
Net decrease in cash, cash equivalents and restricted cash	(18,791)	(48)	(3,174)	(22,013)
Cash, cash equivalents and restricted cash at beginning of period	39,707	66	12,646	52,419
Cash, cash equivalents and restricted cash at end of period	$20,916	$ 18	$ 9,472	$ 30,406

The following table is a reconciliation of cash and cash equivalents to total cash, cash equivalents, and restricted cash:

	September 30, 2018			
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Total Consolidated
	(In thousands)			
Cash and cash equivalents	$20,553	$ 18	$ 9,472	$ 30,043
Restricted cash included in prepaid expenses and other current assets	60	—	—	60
Restricted cash included in other long-term assets	303	—	—	303
Total cash, cash equivalents, and restricted cash shown in statement of cash flows	$20,916	$ 18	$ 9,472	$ 30,406

Statement of Cash Flows	Nine Months Ended September 30, 2017			
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Total Consolidated
	(In thousands)			
Cash flows from operating activities:				
Net cash provided by (used in) operating activities	$(3,109)	$ 21,127	$ (8,324)	$ 9,694
Cash flows from investing activities:				
Investment in multi-client data library	—	(16,576)	—	(16,576)
Purchase of property, plant, equipment and seismic rental equipment	(165)	(775)	(81)	(1,021)
Net cash used in investing activities	(165)	(17,351)	(81)	(17,597)
Cash flows from financing activities:				
Payments on notes payable and long-term debt	(1,018)	(3,244)	(58)	(4,320)
Intercompany lending	(1,574)	(704)	2,278	—
Other financing activities	(257)	—	—	(257)
Net cash provided by (used in) financing activities	(2,849)	(3,948)	2,220	(4,577)
Effect of change in foreign currency exchange rates on cash, cash equivalents and restricted cash	—	—	(271)	(271)
Net decrease in cash, cash equivalents and restricted cash	(6,123)	(172)	(6,456)	(12,751)
Cash, cash equivalents and restricted cash at beginning of period	23,823	215	29,395	53,433
Cash, cash equivalents and restricted cash at end of period	$17,700	$ 43	$ 22,939	$ 40,682

The following table is a reconciliation of cash and cash equivalents to total cash, cash equivalents, and restricted cash:

	September 30, 2017			
	ION Geophysical Corporation	The Guarantors	All Other Subsidiaries	Total Consolidated
	(In thousands)			
Cash and cash equivalents	$17,243	$ 43	$ 22,939	$ 40,225
Restricted cash included in prepaid expenses and other current assets	154	—	—	154
Restricted cash included in other long-term assets	303	—	—	303
Total cash, cash equivalents, and restricted cash shown in statement of cash flows	$17,700	$ 43	$ 22,939	$ 40,682

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

Executive Summary

Our Business

In this Form 10-Q, "ION Geophysical," "ION," "the company" (or, "the Company"), "we," "our," "ours" and "us" refer to ION Geophysical Corporation and its consolidated subsidiaries, except where the context otherwise requires or as otherwise indicated.

The information contained in this Quarterly Report on Form 10-Q contains references to trademarks, service marks and registered marks of ION and our subsidiaries, as indicated. Except where stated otherwise or unless the context otherwise requires, the terms "VectorSeis," "Orca," "WiBand," and "4Sea" refer to VECTORSEIS®, ORCA®, WiBand® and 4Sea® registered marks owned by ION, and the terms "Marlin" and "Gator," refers to the Marlin™ and GATOR™, trademark owned by ION.

Leveraging innovative technologies, ION creates value through data capture, analysis and optimization to enhance critical decision-making abilities and returns. ION's offerings are focused on improving E&P decision-making, enhancing reservoir management and optimizing offshore operations. While ION's traditional focus for its cutting-edge technology has been on the E&P industry, we are now broadening and diversifying our business into relevant adjacent markets such as offshore logistics, military and marine robotics.

Our geoscience technology, services and solutions are designed to enable oil and gas companies to obtain higher resolution images of the Earth's subsurface to reduce their risk and optimize value across the exploration and production lifecycle. Seismic imaging plays a fundamental role in hydrocarbon exploration and reservoir development by delineating structures and rock types in the subsurface. The high resolution images of the Earth's subsurface can be used to reduce uncertainty associated with identifying sources of hydrocarbons and pinpointing drilling locations for wells, which can be costly and risky.

We acquire and process seismic data on both a proprietary and multi-client basis. The multi-client surveys for our data library business are pre-funded or underwritten in part by our customers, and we utilize an asset light strategy by contracting with third-party seismic data acquisition companies to acquire the data, all of which is intended to minimize our risk exposure. We serve customers in most major energy producing regions of the world from offices strategically located across six continents.

We provide our services and products through three business segments: E&P Technology & Services, Operations Optimization (formerly referred to as E&P Operations Optimization) and Ocean Bottom Integrated Technologies (formerly referred to as Ocean Bottom Seismic Services). In addition, we have a 49% ownership interest in our INOVA Geophysical Equipment Limited joint venture ("INOVA Geophysical" or "INOVA").

For 50 years, we have provided innovative technology, such as multi-component imaging with VectorSeis products, the ability to record data from basins below ice, and cableless data acquisition techniques. The advanced technologies we currently offer include our Orca and Gator command and control software systems, Full Waveform Inversion ("FWI") data processing technology, our ocean bottom seismic ("OBS") acquisition systems, and other technologies, each of which is designed to deliver improvements in image quality, safety and/or productivity. In 2015, we introduced Marlin to optimize operations offshore. In 2017, we introduced our new fully integrated nodal system, 4Sea, which is designed to deliver a step change in economics, QHSE performance and final image delivery time, creating more value for clients by providing data in time for critical reservoir decisions, such as determining drilling locations and informing enhanced recovery techniques.

We have approximately 500 patents and pending patent applications in various countries around the world. Approximately 44% of our employees are in technical roles and over 22% of our employees have advanced degrees.

E&P Technology & Services. Our E&P Technology & Services segment provides three distinct service activities that often work together.

Our E&P Technology & Services segment creates digital data assets and delivers services to help E&P companies improve decision-making, reduce risk and maximize value. For example, E&P Technology & Services provides information to better understand new frontiers or complex subsurface geologies, how to maximize portfolio value, or how to optimize license round success and acreage values.

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Our Ventures group leverages the world-class geoscience skills of both the Imaging Services and E&P Advisors groups to create global digital data assets that are licensed to multiple E&P companies to optimize their investment decisions. The global data library consists of over 614,000 km of 2-D and over 223,000 sq. km of 3-D multi-client seismic data in virtually all major offshore petroleum provinces. Ventures provides services to manage multi-client or proprietary surveys, from survey planning and design to data acquisition and management, to final subsurface imaging and reservoir characterization. We focus on the technologically intensive components of the image development process, such as survey planning and design, and data processing and interpretation, while outsourcing asset-intensive components (such as field acquisition) to experienced contractors.

Our Imaging Services group offers data processing and imaging services designed to maximize image quality, helping E&P companies reduce exploration and production risk, evaluate and develop reservoirs, and increase production. Imaging Services develops subsurface images by applying its processing technology to data owned or licensed by its customers. We maintain approximately 24 petabytes of digital seismic data storage in four global data centers, including two core data centers located in Houston and in the U.K.

Our E&P Advisors' strategy is to provide technical, commercial and strategic advice to host governments, E&P companies and private equity firms to evaluate and market oil and gas opportunities and/or assets world-wide, sharing in the value we create.

Operations Optimization. Our Operations Optimization segment develops mission-critical subscription offerings and provides engineering services that enable operational control and optimization offshore. This segment is comprised of our Optimization Software & Services and Devices offerings.

Our Optimization Software & Services group provides survey design and command and control software systems and related services for marine towed streamer and seabed operations. Our Orca software is installed on towed streamer marine vessels worldwide, and our Gator software is used by seabed crews. Our latest offering, Marlin is used to optimize offshore operations.

Our Devices group is engaged in the manufacture and repair of marine towed streamer positioning and control systems and analog geophone sensors.

Ocean Bottom Integrated Technologies. Higher quality data can be acquired from the sea floor compared to the traditional method of acquiring it near the surface, which enables companies to have a better image and better understanding of the subsurface to make optimal reservoir decisions. ION provides a full suite of technology and services that includes survey design, planning, acquisition, data processing, interpretation and reservoir services to optimize image quality, operational efficiency and safety. ION's Ocean Bottom Integrated Technologies group integrates a variety of ION's advanced technologies to accelerate OBS data capture and delivery for our clients' enhanced reservoir decision-making, and improved returns.

Our team develops re-deployable ocean bottom data acquisition technology. We introduced our new fully integrated ocean bottem system, 4Sea, in 2017. 4Sea is differentiated in its ability to deliver a step change in economics, QHSE performance and final image delivery time, creating more value for the client by providing information in time for critical decisions, such as determining drilling locations, fluid injections, and the like.

We evaluated numerous possible commercialization paths for 4Sea and are pursuing two asset light business models that we believe will deliver a higher, more sustainable return over the long-term for our shareholders. The first is making the individual components of 4Sea available more broadly to all OBS service providers on a value-based pricing model, allowing us to participate in the success we enable. The second approach is to license the right to manufacture and use the fully integrated system to a service provider on a value-based pricing model, such as a royalty stream. While not our primary route to market, we are continuing to pursue projects for the crew on a case-by-case basis that meet our long-term risk and return thresholds.

INOVA Geophysical. Historically, we conducted our land seismic equipment business through INOVA Geophysical, which is a joint venture with BGP Inc. ("BGP"). BGP is a subsidiary of China National Petroleum Corporation, and is generally regarded as the world's largest land geophysical service contractor. BGP owns a 51% equity interest in INOVA Geophysical, and we own the remaining 49% interest. INOVA manufactures cable-based and cableless data acquisition systems, digital sensors, vibroseis vehicles (i.e., vibrator trucks) and source controllers for land seismic surveys. We wrote our investment in INOVA down to zero as of December 31, 2014.

Public Equity Offering and Retirement of Debt

On February 21, 2018, we announced our successful completion of a public equity offering to begin delevering our business. As part of the equity offering, we sold 1,820,000 of our common shares at a price of $27.50 per share, and issued warrants to purchase an additional 1,820,000 shares of our common stock. The warrants have an exercise price of $33.60 per share are immediately exercisable and expire in March 2019. If the warrants are exercised in full, we would receive additional proceeds of $61.2 million excluding underwriter fees and other transaction expenses. Our net cash flows for the first quarter of

2018 reflect the $47.0 million of net proceeds received from our equity offering, a portion of which were used to retire the $28.5 million of Third Lien Notes ahead of their scheduled maturity in May 2018. We also repaid the $10.0 million of outstanding indebtedness under our Credit Facility during the first quarter 2018. As a result of our first quarter 2018 debt repayments, we have $1.3 million of current debt remaining on our balance sheet at September 30, 2018, and our remaining long-term debt obligation is the $120.6 million of our indebtedness under our Second Lien Notes due in December 2021.

Macroeconomic Conditions

Demand for our services and products is cyclical and dependent upon activity levels in the oil and gas industry, particularly our customers' willingness to invest capital in the exploration for oil and natural gas. Our customers' capital spending programs are generally based on their outlook for near-term and long-term economic growth, resource supply and demand, and commodity prices. Third-party reports indicate that global exploration and production spending is expected to increase 8% in 2018, 15% to 20% in North American and 5% internationally. This is an improvement from the 4% growth in 2017 that was preceded by two years of double-digit declines. In addition, this is the first time in three years that international spending is expected to increase where our offerings are more relevant. Shale production has dominated activity during the downturn due to its competitive break-even prices and short payback period compared to conventional exploration. However, longer-term, there's a general consensus that investment in conventional resources is required to meet longer-term demand in the next decade. We're starting to see increasing pressure for a resumption in offshore investment and exploration activity to replace reserves.

Recent Intercontinental Exchange Brent ("Brent") and West Texas Intermediate ("WTI") crude oil, and Henry Hub natural gas pricing trends are as follows:

	Average Price [a]		
Quarter Ended	Brent Crude (per bbl)	WTI Crude (per bbl)	Henry Hub Natural Gas (per mcf)
9/30/2018	75.07	69.69	2.93
6/30/2018	74.44	67.60	2.84
3/31/2018	66.95	62.96	3.08
12/31/2017	61.40	55.27	2.90
9/30/2017	52.10	48.15	2.95
6/30/2017	49.55	48.10	3.08
3/31/2017	53.59	51.62	3.02
12/31/2016	49.11	49.14	3.04
9/30/2016	45.80	44.85	2.88
6/30/2016	45.57	45.46	2.15
3/31/2016	33.84	33.35	1.99

[a] Source: U.S. Energy Information Administration ("EIA").

Crude oil prices can be volatile due to a number of factors. Significant downward oil price volatility began late in 2014 and reached a low average of $33 per barrel in early 2016. The material decrease in crude oil prices can be attributed principally to high levels of global crude oil inventories resulting from significant production growth in the U.S. shale plays and the strengthening of the U.S. dollar relative to other foreign currencies, causing a global supply and demand imbalance for crude oil. In late November 2016, OPEC and other non-OPEC participants, such as Russia, reached an agreement to cut their oil production. In late June 2018, Saudi Arabia and Russia agreed to add oil to the global market, while effectively keeping OPEC and some non-OPEC states in full conformity with the late 2016 pact to curb output. In September 2018, Saudi Arabia and Russia increased output as agreed. With the increase in worldwide demand, recent extension of the OPEC production cuts through December 2018, partially offset by the

agreement with Saudi Arabia and Russia to compensate for lost capacity in Iran and Venezuela, global crude oil supply and demand is essentially in equilibrium, stabilizing prices and capital expenditure.

The prices for Brent crude oil increased to an average of $72 per barrel in the first nine months of 2018. This represents a $19 per barrel improvement over the average crude oil prices for the full year 2017 of $53. This price increase was due to robust global demand and sustained OPEC production cuts, the combination of which resulted in net inventory crude draws that reduced the overall crude surplus. The EIA forecasts the Brent crude oil spot price will average $74 per barrel in 2018 and $75 per barrel in 2019. Energy reform in Mexico and Brazil that opened up the countries for increased international investment, in conjunction with the stability of oil prices, has resulted in increased investment in those areas.

Given the historical volatility of crude prices, there is a continued risk that if prices start to decline again due to high levels of crude oil production, there is a potential for slowing growth rates in various global regions and/or for ongoing supply/demand imbalances.

E&P spending has continued to rebound in 2018 over 2017, which was preceded by two successive years of double digit declines. This positive trend in E&P spending, aided by favorable macroeconomic conditions, has resulted in increased E&P revenues in 2017 and 2018. If global production of oil decreases due to reduced capital investment by E&P companies, government instability occurs in a major oil-producing nation, or energy demand materially exceeds forecasts, the recovery in Brent crude oil prices could continue to improve. If commodity prices do not continue to improve, or if they start to deteriorate again, demand for our services and products could decline.

Impact to Our Business

We are seeing signs of increasing activity in our business, primarily due to the strategic shift we made to move our offerings closer to the reservoir and the associated continued success of our 3-D multi-client programs as well as clients starting to renew interest in conventional reserve replacement and offshore exploration. Generally, our revenue and EBITDA generation increases sequentially throughout the year as customers set budgets in the first quarter, firm up plans throughout the year, and spend excess budget in the fourth quarter. Investments in our multi-client data library are dependent upon the timing of our new venture projects and the availability of underwriting by our customers. We continue to maintain high standards for underwriting new projects. Our asset light strategy enables us to scale our business to market conditions avoiding significant fixed costs and maintaining flexibility to manage the timing and amount of our capital expenditures.

In our E&P Technology & Services segment, new venture revenues experienced significant declines compared to the third quarter 2017, while data library revenues increased. In the current disciplined spending environment, clients wait to purchase data until a formal public announcement has been made by the government. Delays in license round announcements can materially impact the timing of sales in areas where our new venture programs are underway. Our under performance was driven by the continued delay of the Panama license round announcement, the deferment of new E&P investments in Mexico until there is more policy clarity from the newly elected administration that takes office in December and the continued focus on cash preservation within E&P companies restricting exploration spending. We invested $19.9 million in our multi-client data library during the first three quarters of 2018 and we expect investments in our multi-client data library to be in a range of $30 million to $35 million for 2018, compared to the $23.7 million invested in 2017.

As of September 30, 2018, our E&P Technology & Services segment backlog, which consists of commitments for (i) data processing work, (ii) new venture projects (both multi-client and proprietary) by our Ventures group underwritten by our customers and (iii) E&P Advisor projects, was $33.1 million compared to $39.2 million at December 31, 2017 and $39.6 million at September 30, 2017. The majority of our backlog relates to our 3-D multi-client reimaging programs offshore Brazil and to a lesser extent from new 2-D multi-client programs in Canada and Africa and our 3-D multi-client programs in Mexico and our proprietary Imaging Services and E&P Advisors work. We anticipate that the majority of our backlog will be recognized as revenue over the next six months.

We embarked on a new strategy for our Ocean Bottom Integrated Technologies segment at the end of 2017 that will include licensing 4Sea individual components. Such licensing will be recognized through the relevant segment, either E&P Technology and Services or Operations Optimization. If a customer licenses the right to manufacture and use the fully integrated system or we undertake OBS acquisition projects that meet our long-term risk and return thresholds, those activities will be recognized in this segment. During 2017, our existing ocean bottom vessel leases expired, consistent with our asset light strategy. We continue to see significant long-term potential for our technologies to improve OBS safety, efficiency and data quality, and we expect demand for OBS surveys to continue increasing.

Within the Operations Optimization segment, increases in Optimization Software & Services revenues was due to continued increase in subscription-based software revenues and hardware sales of its Gator ocean bottom command and control software. Devices revenues continue to be impacted by reduced towed streamer seismic contractor activity. Since early 2014, seismic contractors have taken approximately 41 seismic vessels, or about 34% of the fleet, out of the market, however, in 2018 the trend of removing vessels from the market has flattened.

It is our view that technologies that provide a competitive advantage through improved imaging, lower costs, higher productivity, or enhanced safety will continue to be valued in our marketplace. We believe that our newest technologies, such as Marlin and 4Sea, will continue to attract customer interest, because these technologies are designed to deliver those desirable attributes.

WesternGeco Litigation

A more in depth treatment of the WesternGeco litigation and related proceedings is set forth above in Footnote 8 “Litigation” of Footnotes to Unaudited Condensed Financial Statements. As noted in such Footnote, on July 2, 2015, the United States Court of Appeals for the Federal Circuit in Washington, D.C. (the “Court of Appeals”) reversed in part the Final

Judgment of the District Court, holding the District Court erred by including lost profits in the Final Judgment. Lost profits were $93.4 million and prejudgment interest on the lost profits was approximately $10.9 million of the $123.8 million Final Judgment. Pre-judgment interest on the lost profits portion will be treated in the same way as the lost profits. Post-judgment interest will likewise be treated in the same fashion. On July 29, 2015, WesternGeco filed a petition for rehearing en banc before the Court of Appeals. On October 30, 2015 the Court of Appeals denied WesternGeco's petition for rehearing en banc.

As previously disclosed, we had taken a loss contingency accrual of $123.8 million. As a result of the reversal by the Court of Appeals, as of June 30, 2015, we reduced our loss contingency accrual to $22.0 million.

On February 26, 2016, WesternGeco filed a petition for writ of certiorari by the Supreme Court. We filed our response on April 27, 2016. Subsequently, on June 20, 2016, the Supreme Court vacated the Court of Appeals' ruling although it did not address the lost profits question at that time. Rather, in light of the changes in case law regarding the standard of proof for willfulness in the Halo and Stryker cases, the Supreme Court indicated that the case should be remanded to the Court of Appeals for a determination of whether or not the willfulness determination by the District Court was appropriate.

On October 14, 2016, the Court of Appeals issued a mandate returning the case to the District Court for consideration of whether or not additional damages for willfulness were appropriate.

On November 14, 2016, the District Court ordered the sureties to pay principal and interest on the royalty damages previously awarded and declined to issue a final judgment until after consideration of whether enhanced damages for willfulness would be awarded. While we did not agree with the decision by the District Court ordering payment of the royalty damages and interest without a final judgment, we paid the $20.8 million due pursuant to the order to WesternGeco on November 25, 2016, at which point we reduced our loss contingency accrual to zero.

On March 14, 2017, the District Court held a hearing on whether or not additional damages for willfulness would be payable. The Judge found that ION's infringement was willful, based on his perception that ION did not adequately investigate the scope of the patents, and ION's conduct during trial. However, in his ruling at the hearing, he limited enhanced damages to $5.0 million because it was a "close case," there was no evidence of copying, and ION was simply acting as a competitor in a capitalist marketplace. The District Court also ordered the appeal bond to be released and discharged. The Court's findings and ruling were memorialized in an order issued on May 16, 2017. On June 30, 2017, WesternGeco and ION jointly agreed that neither party would appeal the District Court's award of $5.0 million in enhanced damages. The parties also agreed that the $5.0 million would be paid over the course of 12 months. This agreement was memorialized by the court in an order issued on July 26, 2017. Upon assessment of the $5.0 million in enhanced damages, we accrued $5.0 million in the first quarter of 2017. As we have made the payments, the accrual has been adjusted, and as of June 30, 2018, the loss contingency accrual was zero.

WesternGeco filed a second petition for writ of certiorari in the U.S. Supreme Court on February 17, 2017, appealing the lost profits issue again. We filed our response to WesternGeco's second attempt to appeal to the Supreme Court the lost profits issue, raising both the substantive matters we addressed by opposing WesternGeco's first petition, and also advancing a procedural argument that WesternGeco could not raise the same issue for a second time in a second petition for certiorari. On May 30, 2017, the Supreme Court called for the views of the U.S. Solicitor General regarding whether or not to grant certiorari. ION and WesternGeco each met with the Solicitor General's office in late July, 2017. On December 6, 2017, the Solicitor General filed its brief, and took the position that the Supreme Court ought to grant certiorari. On January 12, 2018, the Supreme Court granted certiorari as to whether the Court of Appeals erred in holding that lost profits arising from use of prohibited combinations occurring outside of the United States are categorically unavailable in cases where patent infringement is proven under 35 U.S.C. § 271(f)(2) (the specific statute under which we were ultimately held to have infringed WesternGeco's patents and upon which the District Court and the Court of Appeals relied in entering their final rulings).

The Supreme Court heard oral arguments on April 16, 2018. At oral arguments, we argued that the Court of Appeals' decision that eliminated lost profits ought to be affirmed. WesternGeco and the Solicitor General argued that the Court of Appeals' decision that eliminated lost profits ought to be reversed.

On June 22, 2018, the Supreme Court reversed the judgment of the Court of Appeals, held that the award of lost profits to WesternGeco by the District Court was a permissible application of Section 284 of the Patent Act, and

remanded the case back to the Circuit Court for further proceedings consistent with its (the Supreme Court's) opinion. On July 24, 2018, the Supreme Court issued the judgment that returned the case to the Court of Appeals.

At the Court of Appeals, in the case leading up to the Supreme Court, we presented multiple arguments as to why the District Court's award of lost profits was improper. The lost profits damages awarded by the District Court were based on the use of our products by our customers outside of the United States. We argued at the Court of Appeals, and at the Supreme Court, that, as a matter of law, WesternGeco cannot recoup lost profits for the overseas use of our products. This issue, decided in favor of WesternGeco in the recent Supreme Court opinion, was the only issue reached by the Supreme Court in that decision.

We also argued in the Court of Appeals that, under the jury instructions given in our case, the jury was required to find that we had been a direct competitor of WesternGeco in the survey markets where WesternGeco lost profits in order for WesternGeco to recoup them. Because the Court of Appeals ruled in favor of us on the first argument, and overturned the award of lost profits on that basis, the Court of Appeals did not rule on our "direct competitor" argument, and that argument was not presented to the Supreme Court for review. Thus, while the Supreme Court overturned the Court of Appeals' decision that WesternGeco should not be allowed to recover foreign lost profits under the Patent Act, the Supreme Court did not order us to pay any amount with respect to lost profits, but rather remanded the case back to the Court of Appeals for further consideration of whether lost profits are payable by us in this case.

On July 25, 2018, we filed a motion for leave to file supplemental briefing in the Court of Appeals, and concurrently, filed a brief arguing that the judgment of the District Court as to both lost profits and reasonable royalties should be vacated, and that the case should be remanded to the District Court for a new determination on damages. On July 27, 2018, the Court of Appeals vacated its September 21, 2016 judgment with respect to damages, and ordered WesternGeco and Ion to submit supplemental briefing on what relief is appropriate in light of the Supreme Court's decision. This order rendered our motion for leave to submit briefing moot, and, accordingly, the Court of Appeals denied our motion as moot. ION and WesternGeco each submitted briefing in accordance with the Court of Appeals' order (with the last brief being filed with the Court of Appeals on September 7, 2018).

Other proceedings may have an impact on WesternGeco's ability to recover lost profits damages and reasonable royalties even if we do not prevail on the "direct competitor" argument in the Court of Appeals, and were addressed, along with the direct competitor argument, in the parties' briefing to the Court of Appeals (further described below). In particular, we were a party to a challenge to the validity of several of WesternGeco's patent claims by means of an Inter Partes Review ("IPR") with the Patent Trial and Appeal Board ("PTAB"). While the above-described lawsuit was pending on appeal, the PTAB invalidated four of the six patent claims that formed the basis for the jury verdict in the lawsuit. WesternGeco appealed that decision to the Court of Appeals, which heard ION and WesternGeco's arguments on January 23, 2018. The Court of Appeals affirmed the PTAB's invalidation of the patents on May 7, 2018, and on July 16, 2018, the Court of Appeals denied WesternGeco's petition for a panel rehearing and a rehearing en banc. This decision by the Court of Appeals may provide a separate ground for reducing or vacating any lost-profits or reasonable royalty award in the lawsuit.

WesternGeco argued, in its pending briefs before the Court of Appeals, that the only issue that remains to be decided is whether lost profits are unavailable to WesternGeco due to our "direct competitor" argument, and argued that the invalidation of four of its six patent claims by the Court of Appeals (which invalidation WesternGeco intends to appeal to the Supreme Court) should have no effect on lost profits or on the royalty award we already paid. WesternGeco also argued that lost profits should be available notwithstanding our "direct competitor" argument.

We argued that lost profits are not available on the basis of the "direct competitor" argument, that the Court of Appeals' affirmation that four of the six patent claims at issue are invalid has a preclusive effect on WesternGeco's damages claims, and that the Court of Appeals should order a new trial as to the royalty damages we already paid. We argued, in the alternative, that if the Court of Appeals does not find our "direct competitor" argument persuasive, the Court of Appeals should nonetheless vacate the District Court's award of royalty damages and lost profits damages and order a new trial as to both royalty damages and lost profits.

On October 19, 2018, the Court of Appeals scheduled oral arguments for the issues we raised and WesternGeco in their briefs pending before that court. Oral arguments are scheduled to take place on November 16, 2018.

We may not ultimately prevail in any of the appeals processes noted above and we could be required to pay some or all of the lost profits that were awarded by the District Court if the judgment of the District Court is upheld by the Court of Appeals on remand, or if a new trial is granted and a new judgment issues. Our assessment that we do not have a loss contingency may change in the future due to developments at the Supreme Court, Court of Appeals, or District Court, and other events, such as changes in applicable law, and such reassessment could lead to the determination that an additional loss contingency is probable, which could have a material effect on our business, financial condition and results of operations. Our assessments disclosed in this Quarterly Report on Form 10-Q or elsewhere are based on currently available information and involve elements of judgment and significant uncertainties.

Key Financial Metrics

The table below provides an overview of key financial metrics for our company as a whole and our three business segments for the three and nine months ended September 30, 2018, compared to the same period of 2017 (dollars in thousands, except share data).

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net revenues:				
E&P Technology & Services:				
New Venture	$18,218	$43,542	$40,069	$70,477
Data Library	13,956	5,044	21,629	25,360
Total multi-client revenues	32,174	48,586	61,698	95,837
Imaging Services	4,147	3,468	14,379	13,409
Total	36,321	52,054	76,077	109,246
Operations Optimization:				
Devices	5,356	5,260	14,275	17,929
Optimization Software & Services	5,523	3,781	15,099	12,477
Total	10,879	9,041	29,374	30,406
Ocean Bottom Integrated Technologies	—	—	—	—
Total	$47,200	$61,095	$105,451	$139,652
Gross profit (loss):				
E&P Technology & Services	$12,139	$28,533	$11,626	$44,464
Operations Optimization	5,736	4,055	14,980	15,100
Ocean Bottom Integrated Technologies	(1,400)	(2,479)	(4,795)	(7,736)
Total	$16,475	$30,109	$21,811	$51,828
Gross margin:				
E&P Technology & Services	33%	55%	15%	41%
Operations Optimization	53%	45%	51%	50%
Ocean Bottom Integrated Technologies	—%	—%	—%	—%
Total	35%	49%	21%	37%
Income (loss) from operations:				
E&P Technology & Services	$6,578	$22,695	$(4,422)	$27,952
Operations Optimization	1,963	998	3,992	5,569
Ocean Bottom Integrated Technologies	(2,811)	(4,432)	(8,566)	(12,300)
Support and other	(8,182)	(9,325)	(28,615)	(28,769)
Income (loss) from operations	$(2,452)	$9,936	$(37,611)	$(7,548)
Operating margin:				
E&P Technology & Services	18%	44%	(6)%	26%
Operations Optimization	18%	11%	14%	18%
Ocean Bottom Integrated Technologies	—%	—%	—%	—%
Support and other	(17)%	(15)%	(27)%	(21)%
Total	(5)%	16%	(36)%	(5)%
Net income (loss) attributable to ION	$(7,536)	$4,935	$(51,828)	$(28,848)
Net income (loss) per share:				
Basic	$(0.54)	$0.42	$(3.81)	$(2.43)
Diluted	$(0.54)	$0.41	$(3.81)	$(2.43)
Special items:	275 (a)	—	4,013 (a)	5,000 (b)
Net loss attributable to ION as adjusted	$(7,261)	$4,935	$(47,815)	$(23,848)
Net loss per share as adjusted:				
Basic	$(0.52)	$0.42	$(3.52)	$(2.01)
Diluted	$(0.52)	$0.41	$(3.52)	$(2.01)

(a)

Represents the ongoing expense associated with the accelerated vesting and cash exercise of stock appreciation rights awards.

(b) Represents a loss contingency accrual related to legal proceedings. See Footnote 8 “Litigation” of Footnotes to Consolidated Financial Statements.

We intend that the following discussion of our financial condition and results of operations will provide information that will assist in understanding our consolidated financial statements, the changes in certain key items in those financial statements from period to period, and the primary factors that accounted for those changes. The financial results are reported in accordance with Generally Accepted Accounting Principles ("GAAP"). However, management believes that certain non-GAAP performance measures may provide users of this financial information, additional meaningful comparisons between current results and results in prior operating periods. One such non-GAAP financial measure is adjusted income (loss) from operations or adjusted net income (loss), which excludes certain charges or amounts. This adjusted income (loss) amount is not a measure of financial performance under GAAP. Accordingly, it should not be considered as a substitute for income (loss) from operations, net income (loss) or other income data prepared in accordance with GAAP.

For a discussion of factors that could impact our future operating results and financial condition, see (i) Item 1A. "Risk Factors" in our Annual Report on Form 10-K, as amended, for the year ended December 31, 2017, and (ii) Item 1A. "Risk Factors" in Part II of this Form 10-Q.

Results of Operations

Three Months Ended September 30, 2018 Compared to Three Months Ended September 30, 2017

Our consolidated net revenues of $47.2 million for the three months ended September 30, 2018 (the "Current Quarter") decreased by $13.9 million, or 23%, compared to total net revenues of $61.1 million for the three months ended September 30, 2017 (the "Comparable Quarter"). Our overall gross margin was 35% in the Current Quarter, as compared to 49% in the Comparable Quarter. For the Current Quarter, our loss from operations was $2.5 million, compared to income of $9.9 million for the Comparable Quarter.

Net loss for the Current Quarter was $7.5 million, or $(0.54) per share, compared to $4.9 million, or $0.41 per diluted share, for the Comparable Quarter. Excluding the impact of special items, as noted in the above table, adjusted net loss for the Current Quarter was $7.3 million, or $(0.52) per share.

Net Revenues, Gross Profits and Gross Margins

E&P Technology & Services — Net revenues for the Current Quarter decreased by $15.8 million, or 30%, to $36.3 million, compared to $52.1 million for the Comparable Quarter. Within the E&P Technology & Services segment, total multi-client revenues were $32.2 million, a decrease of 34%, with new venture revenues experiencing significant declines from the Comparable Quarter, partially offsetting the overall decline in new ventures was an increase in data library revenues, attributable to sales of the recently completed phase of the Brazil 3-D reimaging program, along with sales of 2-D data libraries in India. The decrease in multi-client revenues was driven by the continued delay of the Panama license round announcement, the deferment of new E&P investments in Mexico until there is more policy clarity from the newly elected administration that takes office in December and the continued focus on cash preservation within E&P companies restricting exploration spending. Imaging Services revenues were $4.1 million, a 20% increase. This increase was attributable to an increase in proprietary ocean bottom nodal imaging projects. The Current Quarter reflects a Gross profit of $12.1 million, representing a 33% gross margin, compared to a Gross profit of $28.5 million, which represented a 55% gross margin in the Comparable Quarter. These declines in gross profit and margin were due to the decrease in revenues noted above.

Operations Optimization — Total net revenues for the Current Quarter increased by $1.9 million, or 21% to $10.9 million, compared to $9.0 million for the Comparable Quarter. Optimization Software & Services net revenues for the Current Quarter increased by $1.7 million, or 45% to $5.5 million, compared to $3.8 million for the Comparable Quarter, primarily due to an increase in subscription-based software revenues and hardware sales of our Gator ocean bottom command and control system. Devices net revenues for the Current Quarter increased by $0.1 million, or 2%, to $5.4 million, which is fairly consistent compared to $5.3 million for the Comparable Quarter. The Current Quarter reflects a Gross profit of $5.7 million, representing a 53% gross margin, compared to a Gross profit of $4.1 million, representing a 45% gross margin for the Comparable Quarter. These increases in gross profit and margin were due to the increase in revenues as described above.

Ocean Bottom Integrated Technologies — Net revenues for the Current Quarter and Comparable Quarter were zero. In line with our component strategy, revenues for the elements of fully integrated 4Sea system will be recognized in the relevant segment, either E&P Technology and Services or Operations Optimization. While not our primary route to

market, we are continuing to pursue projects for the crew on a case-by-case basis that meet our long-term risk and return thresholds. Gross loss for the Current Quarter was $1.4 million, compared to gross loss of $2.5 million for the Comparable Quarter. The decline was due to reduced depreciation expense and several cost control initiatives implemented in 2017 and 2018.

Operating Expenses

Research, Development and Engineering — Research, development and engineering expense increased $0.6 million, or 14%, to $5.0 million, for the Current Quarter, compared to $4.4 million for the Comparable Quarter. We see significant long-term potential for image quality, safety and productivity. We continue to invest in imaging algorithms and infrastructure, devices and software.

Marketing and Sales — Marketing and sales expense decreased $0.4 million, or 8%, to $5.2 million, for the Current Quarter, compared to $5.6 million for the Comparable Quarter, primarily due to decreased commission expenses driven by decreased sales in the E&P Technology and Services segment.

General, Administrative and Other Operating Expenses — General, administrative and other operating expenses decreased $1.4 million, or 14%, to $8.7 million, for the Current Quarter, compared to $10.1 million for the Comparable Quarter. The decrease was driven by reductions in employment expense and professional fees as we continue to maintain our cost control discipline.

Other Items

Interest Expense, Net — Interest expense, net, was $3.0 million for the Current Quarter compared to $4.0 million for the Comparable Quarter. The decrease in interest expense was a result of lower outstanding debt during the Current Quarter. For additional information, please refer to “Liquidity and Capital Resources — Sources of Capital” below.

Income Tax Expense — Income tax expense for the Current Quarter was $2.1 million compared to $1.7 million for the Comparable Quarter. Our effective tax rates for the Current Quarter and Comparable Quarter were (38.6)% and 25.2%, respectively. The income tax expense for the Current Quarter and Comparable Quarter primarily relates to results generated by our non-U.S. businesses. Our effective tax rates for the Current Quarter and Comparable Quarter were negatively impacted by the change in valuation allowance related to U.S. operating losses for which we cannot currently recognize a tax benefit. See further discussion of establishment of the deferred tax valuation allowance at Footnote 7 “Income Taxes” of Notes to Unaudited Condensed Consolidated Financial Statements.

Nine Months Ended September 30, 2018 Compared to Nine Months Ended September 30, 2017

Our consolidated net revenues of $105.5 million for the nine months ended September 30, 2018 (the “Current Period”) decreased by $34.2 million, or 24%, compared to total net revenues of $139.7 million for the nine months ended September 30, 2017 (the “Comparable Period”). Our overall gross profit percentage for the Current Period was 21%, compared to 37%, for the Comparable Period. For the Current Period, our loss from operations was $37.6 million, compared to $7.5 million, for the Comparable Period.

Net loss for the Current Period was $51.8 million, or $(3.81) per share, compared to a net loss of $28.8 million, or $(2.43) per share, in the Comparable Period. Excluding the impact of special items, as noted in the above table, adjusted net loss for Current Period was $47.8 million, or $(3.52) per share compared to adjusted net loss of $23.8 million, or $(2.01) per share, in the Comparable Period.

Net Revenues, Gross Profits and Gross Margins

E&P Technology & Services — Net revenues for the Current Period decreased by $33.1 million, or 30%, to $76.1 million, compared to $109.2 million for the Comparable Period. The change in revenues during the Current Period is fairly consistent with the changes as described for the Current Quarter as discussed above. Gross profit decreased by $32.9 million to a Gross profit of $11.6 million, or 15% gross margin, compared to a Gross profit of $44.5 million, or 41% gross margin, in the Comparable Period. These declines in gross profit and margin were due to the decrease in revenues noted above.

Operations Optimization — Total net revenues for the Current Period decreased by $1.0 million or (3)%, to $29.4 million compared to $30.4 million for the Comparable Period. Optimization Software & Services net revenues for the Current Period increased by $2.6 million, or 21%, to $15.1 million compared to $12.5 million for the Comparable Period. The increase in revenues during the Current Period is due to an increase in subscription-based software revenues and hardware sales of our Gator ocean bottom command and control system. Devices net revenues for the Current Period decreased by $3.6 million, or 20%, to $14.3 million, compared to $17.9 million for the Comparable Period, Devices net revenues continue to be impacted by reduced activity by seismic contractors as numerous vessels have been taken out of service. Gross profit decreased by $0.1 million to $15.0 million, representing a 51% gross margin, for the Current Period compared to $15.1 million, representing a 50% gross margin, for the Comparable

Period. Gross profits and gross margin remained fairly consistent with the Comparable Period.

Ocean Bottom Integrated Technologies — Net revenues for the Current Quarter and Comparable Quarter were zero. In line with our component strategy, revenues for the elements of fully integrated 4Sea system will be recognized in the relevant segment, either E&P Technology and Services or Operations Optimization. While not our primary route to market, we continue to pursue projects for the crew on a case by case basis that meet our long-term risk and return thresholds. Gross loss for the Current Period was $4.8 million compared to Gross loss of $7.7 million for the Comparable Period. The decline was due to reduced depreciation expense and several cost control initiatives implemented in 2017 and 2018, including the renegotiation and eventual expiration of our vessel leases, which eliminated our vessel lease costs.

Operating Expenses

Research, Development and Engineering — Research, development and engineering expense was $13.5 million for the Current Period, an increase of $1.5 million, or 13%, compared to $12.0 million for the Comparable Period. We see significant long-term potential for image quality, safety and productivity. We continue to invest in imaging algorithms and infrastructure, devices and software.

Marketing and Sales — Marketing and sales expense was $16.3 million for the Current Period, an increase of $1.2 million, or 8%, compared to $15.1 million, for the Comparable Period, primarily due to increased marketing expenses to broaden and diversify our offerings into adjacent markets.

General, Administrative and Other Operating Expenses — General, administrative and other operating expenses were $29.6 million for the Current Period, a decrease of $2.7 million, or 8%, compared to $32.3 million for the Comparable Period. This decrease was due to a reduction in bonus expense driven by decreased sales in the E&P Technology and Services segment and reduced professional fees as we continue to maintain our cost control discipline.

Other Items

Interest Expense, net — Interest expense, net, was $9.8 million for the Current Period compared to $12.7 million for the Comparable Period. The decrease in interest expense was a result of lower outstanding debt during the first nine months of 2018. For additional information, please refer to “Liquidity and Capital Resources — Sources of Capital” below.

Other Expense, Net — Other expense for the Current Period was $0.6 million compared to other expense of $4.2 million for the Comparable Period. This difference was primarily related to an increase in our loss contingency accrual related to the WesternGeco legal proceedings of $5.0 million in the Comparable Period.

Income Tax Expense — Income tax expense for the Current Period was $3.3 million compared to $3.7 million for the Comparable Period. Our effective tax rates for the Current Period and Comparable Period were (6.9)% and (15.1)%, respectively. Our income tax expense for the Current Period and Comparable Periods, were primarily related to results from our non-US businesses. Our effective tax rate for the Current Period was negatively impacted by the change in valuation allowance related to U.S. operating losses for which we cannot currently recognize a tax benefit. See further discussion of establishment of the deferred tax valuation allowance at Footnote 7 “Income Taxes” of Notes to Unaudited Condensed Consolidated Financial Statements.

Liquidity and Capital Resources

Sources of Capital

As of September 30, 2018, we had total liquidity of $72.8 million, consisting of $30.0 million of cash on hand and nothing drawn from our $42.8 million of available borrowing capacity under our Credit Facility. Our cash requirements include working capital requirements and cash required for our debt service payments, multi-client seismic data acquisition activities and capital expenditures. As of September 30, 2018, we had working capital of $(4.9) million. Working capital requirements are primarily driven by our investment in our multi-client data library ($19.9 million in the Current Period) and royalty payments for multi-client sales. Also, our headcount has traditionally been a significant driver of our working capital needs. As a significant portion of our business is involved in the planning, processing and interpretation of seismic data services, one of our largest investments is in our employees, which requires cash expenditures for their salaries, bonuses, payroll taxes and related compensation expenses, typically in advance of related revenue billings and collections.

Our working capital requirements may change from time to time depending upon many factors, including our operating results and adjustments in our operating plan in response to industry conditions, competition and unexpected

events. In recent years, our primary sources of funds have been cash flows generated from operations, existing cash balances, debt and equity issuances and borrowings under our revolving credit facilities.

On February 21, 2018, we announced our successful completion of a public equity offering to begin de-levering our balance sheet. We issued and sold 1,820,000 shares of common stock at a public offering price of $27.50 per share, and warrants to purchase an additional 1,820,000 shares of our common stock. The net proceeds from this offering were $47.0 million, including transaction expenses. A portion of the net proceeds were used to retire our $28.5 million Third Lien Notes in March 2018 (several weeks before their maturity date). The warrants have an exercise price of $33.60 per share, are immediately exercisable and expire on March 21, 2019. If the warrants are exercised in full prior to their expiration, we would receive additional proceeds of $61.2 million excluding underwriter fees and transaction expenses.

Revolving Credit Facility

On August 16, 2018, we and our material U.S. subsidiaries; GX Technology Corporation, ION Exploration Products (U.S.A) and I/O Marine Systems, Inc. (the "Material U.S. Subsidiaries"), along with GX Geoscience Corporation, S. de R.L. de C.V., a limited liability company (Sociedad de Responsibilidad Limitada de Capital Variable) organized under the laws of Mexico, and a subsidiary of the Company (the "Mexican Subsidiary"), (the Material U.S. Subsidiaries and the Mexican Subsidiary are collectively, the "Subsidiary Borrowers", together with ION Geophysical Corporation are the "Borrowers"), the financial institutions party thereto, as lenders, and PNC Bank, National Association ("PNC"), as agent for the lenders, entered into that certain Third Amendment and Joinder to Revolving Credit and Security Agreement (the "Third Amendment"), amending the Revolving Credit and Security Agreement, dated as of August 22, 2014 (as previously amended by the First Amendment to Revolving Credit and Security Agreement, dated as of August 4, 2015 and the Second Amendment to Revolving Credit and Security Agreement, dated as of April 28, 2016, the "Credit Agreement"). The Credit Agreement, as amended by the First Amendment, the Second Amendment and the Third Amendment is herein called the "Credit Facility"). The Third Amendment amends the Credit Agreement to, among other things:

- extend the maturity date of the Credit Facility by approximately four years (from August 22, 2019 to August 16, 2023), subject to our retirement or extension of the maturity date of its Second Lien Notes, as defined below, which matures on December 15, 2021;
- increase the maximum revolver amount by $10.0 million (from $40.0 million to $50.0 million);
- increase the borrowing base percentage of the net orderly liquidation value as it relates to the multi-client data library (not to exceed $28.5 million, up from the previous maximum of $15.0 million for the multi-client data library component);
- include the eligible billed receivables of the Mexican Subsidiary up to a maximum of $5.0 million in the borrowing base calculation and joins the Mexican Subsidiary as a borrower thereunder (with a maximum exposure of $5.0 million) and require the equity and assets of the Mexican Subsidiary to be pledged to secure obligations under the facility;
- modify the interest rate such that the maximum interest rate remains consistent with the fixed interest rate prior to the Third Amendment (that is, 3.00% per annum for domestic rate loans and 4.00% per annum for LIBOR rate loans), but now lowers the range down to a minimum interest rate of 2.00% for domestic rate loans and 3.00% for LIBOR rate loans based on a leverage ratio for the preceding four-quarter period;
- decrease the minimum excess borrowing availability threshold which (if the Borrowers have minimum excess borrowing availability below any such threshold) triggers the agent's right to exercise dominion over cash and deposit accounts; and
- modify the trigger required to test for compliance with the fixed charges coverage ratio.

The borrowing base under the Credit Facility will increase or decrease monthly using a formula based on certain eligible receivables, eligible inventory and other amounts, including a percentage of the net orderly liquidation value the Borrowers' multi-client data library. As of September 30, 2018, the borrowing base under the Credit Facility was $42.8 million, and there was zero outstanding indebtedness under the Credit Facility.

The Credit Facility requires us to maintain compliance with various covenants. At September 30, 2018, we were in compliance with all of the covenants under the Credit Facility. For further information regarding our Credit Facility, see above Footnote 5 "Long-term Debt" of Footnotes to Unaudited Condensed Financial Statements.

Senior Secured Notes

As of December 31, 2017, ION Geophysical Corporation's 9.125% Senior Secured Second Priority Notes due December 2021 (the "Second Lien Notes") had an outstanding aggregate principal amount of $120.6 million, and ION Geophysical Corporation's 8.125% Senior Third Priority Notes which were to mature in May 2018 (the "Third Lien Notes") had an outstanding aggregate principal amount of $28.5 million prior to its redemption. In March 2018, we obtained consent from a majority of the Second Lien Notes holders and from PNC to redeem, in full, the Third Lien Notes prior to their stated maturity. On March 26, 2018, we redeemed the Third Lien Notes paying the then outstanding principal balance of $28.5 million, plus all accrued and unpaid interest through the redemption date. For a complete discussion of the Third Lien Notes prior to their early

redemption, see Footnote 3 to the Financial Statements included in our Annual Report on Form 10-K, as amended for the year ended December 31, 2017.

The Second Lien Notes remain outstanding and are senior secured second-priority obligations guaranteed by the Material U.S. Subsidiaries and the Mexican Subsidiary. The Second Lien Notes mature on December 15, 2021. Interest on the Second Lien Notes accrues at the rate of 9.125% per annum and is payable semiannually in arrears on June 15 and December 15 of each year during their term, except that the interest payment otherwise payable on June 15, 2021 will be payable on December 15, 2021.

The April 2016 indenture governing the Second Lien Notes contains certain covenants that, among other things, limits or prohibits our ability and the ability of our restricted subsidiaries to take certain actions or permit certain conditions to exist during the term of the Second Lien Notes, including among other things, incurring additional indebtedness, creating liens, paying dividends and making other distributions in respect of our capital stock, redeeming our capital stock, making investments or certain other restricted payments, selling certain kinds of assets, entering into transactions with affiliates, and effecting mergers or consolidations. These and other restrictive covenants contained in the Second Lien Notes Indenture are subject to certain exceptions and qualifications. All of our subsidiaries are currently restricted subsidiaries.

As of September 30, 2018, we were in compliance with all of the covenants under the Second Lien Notes Indenture.

On or after December 15, 2019, we may, on one or more occasions, redeem all or a part of the Second Lien Notes at the redemption prices set forth below, plus accrued and unpaid interest and special interest, if any, on the Second Lien Notes redeemed during the 12-month period beginning on December 15th of the years indicated below:

Date	Percentage
2019	105.500%
2020	103.500%
2021 and thereafter	100.000%

Meeting our Liquidity Requirements

As of September 30, 2018, our total outstanding indebtedness (including capital lease obligations) was approximately $120.8 million, including approximately $120.6 million outstanding Second Lien Notes maturing in December 2021, $3.4 million of equipment capital leases and other short-term debt, partially offset by $3.2 million of debt issuance costs.

For the Current Period, total capital expenditures, including the investments in our multi-client data library, were $20.4 million. We expect investments in our multi-client data library this year to be in the range of $30 million to $35 million. We expect capital expenditures related to property, plant, equipment and seismic rental assets to be in the range of $1 million to $2 million in 2018.

During the Current Period, we paid the remaining $1.25 million of the $5.0 million litigation accrual we established in the first quarter of 2017. We believe that our existing cash balance, cash from operations and undrawn availability under our Credit Facility will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, as described at Part II, Item 1. “Legal Proceedings,” there are possible scenarios involving an outcome in the WesternGeco lawsuit that could materially and adversely affect our liquidity and as a result, our business, financial condition and results of operations.

Cash Flow from Operations

In the Current Period, we used $7.3 million of cash from operating activities compared to $9.7 million of cash generated for the Comparable Period. The decrease was driven by lower revenue activity, reductions in accounts payable and accrued expenses, partially offset by collections of our combined accounts and unbilled receivable balance.

Cash Flow from Investing Activities

Cash used in investing activities was $20.2 million in the Current Period compared to $17.6 million for the Comparable Period. The principal uses of cash in our investing activities during the Current Period were $19.9 million invested in our multi-client data library and $0.5 million for capital expenditures related to property, plant, equipment and seismic rental assets.

The principal use of cash in our investing activities during the Comparable Period were $16.6 million invested in our multi-client data library.

Cash Flow from Financing Activities

Net cash provided by financing activities was $5.2 million in the Current Period, compared to $4.6 million of cash used in the Comparable Period. Cash provided by financing activities was related to $47.0 million of net cash received from our equity offering, partially offset by $30.1 million of payments of long-term debt, including equipment capital leases, and a $10.0 million repayment of our Credit Facility in the Current Period.

The net cash used in financing activities during the Comparable Period was primarily related to $4.3 million of payments of long-term debt, including equipment capital leases.

Inflation and Seasonality

Inflation in recent years has not had a material effect on our cost of goods or labor, or the prices for our products or services. Traditionally, our business has been seasonal, with strongest demand often occurring in the fourth quarter of our fiscal year.

Critical Accounting Policies and Estimates

Refer to our Annual Report on Form 10-K as amended for the year ended December 31, 2017, for a complete discussion of our significant accounting policies and estimates. On January 1, 2018 we adopted Accounting Standard Codification (“ASC”) Topic 606, “Revenue from Contracts with Customers”, (“new revenue standard”), which did not have a material impact on our consolidated balance sheets or consolidated statement of operations for any of our reporting segments. On January 1, 2019 we will adopt Accounting Standards Update (“ASU”) 2016-02, “Leases (Topic 842)”, we expect that the adoption of the standard will add between $50 million to $60 million in right-of-use assets and lease obligations on our consolidated balance sheet and will not significantly impact our income statement. We plan to elect the practical expedients upon transition which will retain the lease classification for leases that exist prior to the adoption of the standard.

There have been no other material changes in the Current Period regarding our critical accounting policies and estimates. For discussion of our adoption of the new revenue standards, see Footnote 4 “Revenue From Contracts With Customers” of Footnotes to Unaudited Condensed Consolidated Financial Statements.

Leases

In February 2016, the Financials Account Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2016-02, “Leases (Topic 842)” which introduces the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The guidance will be effective for annual reporting periods beginning after December 15, 2018 and interim periods within those fiscal years with early adoption permitted. We will adopt ASU 2016-02 on January 1, 2019. We are currently evaluating its operating leases related to offices, processing centers, warehouse spaces and, to a lesser extent, certain equipment, we expect that the adoption of the standard will add between $50 million to $60 million in right-of-use assets and lease obligations on our consolidated balance sheet and will not significantly impact our income statement. We plan to elect the practical expedients upon transition which will retain the lease classification for leases that exist prior to the adoption of the standard.

Foreign Sales Risks

The majority of our foreign sales are denominated in U.S. dollars. Product revenues are allocated to geographical locations on the basis of the ultimate destination of the equipment, if known. If the ultimate destination of such equipment is not known, product revenues are allocated to the geographical location of initial shipment. Service revenues, which primarily relate to our E&P Technology & Services segment, are allocated based upon the billing location of the customer. For the Current and Comparable Periods, international sales comprised 76% and 78%, respectively, of total net revenues.

The following table is a summary of net revenues by geographic area (in thousands):

	Nine Months Ended September 30,	
	2018	2017
Net revenues by geographic area:		
Latin America	$37,356	$53,318
North America	25,452	30,639
Europe	19,811	28,201

Asia Pacific	11,581	15,318
Africa	8,362	2,660
Middle East	1,907	1,713
Commonwealth of Independent States	982	7,803
Total	$105,451	$139,652

Credit Risks

At September 30, 2018, had one multinational oil customer with a balance of 29% of our total combined accounts and unbilled receivable balances. We had one multinational oil customer that comprised 18% of our total net revenues for the nine months ended September 30, 2018.

The loss of this customer or deterioration in our relationship with this customer could have a material adverse effect on our results of operations and financial condition.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Refer to Item 7A of our Annual Report on Form 10-K, as amended for the year ended December 31, 2017 for a discussion regarding our quantitative and qualitative disclosures about market risk. There have been no material changes to those disclosures during the Current Period.

Item 4. Controls and Procedures

Disclosure Controls and Procedures. Disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file with or submit to the Securities and Exchange Commission (the “SEC”) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) is recorded, processed, summarized and reported within the time period specified by the SEC’s rules and forms. Disclosure controls and procedures are defined in Rule 13a-15(e) under the Exchange Act, and they include, without limitation, controls and procedures designed to ensure that information required to be disclosed under the Exchange Act is accumulated and communicated to management, including the principal executive officer and the principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of September 30, 2018. Based upon that evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective as of September 30, 2018.

Changes in Internal Control over Financial Reporting. There was not any change in our internal control over financial reporting that occurred during the three months ended September 30, 2018, which has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1. Legal Proceedings

WesternGeco

In June 2009, WesternGeco L.L.C. ("WesternGeco") filed a lawsuit against us in the United States District Court for the Southern District of Texas, Houston Division. In the lawsuit, styled WesternGeco L.L.C. v. ION Geophysical Corporation, WesternGeco alleged that we had infringed several method and apparatus claims contained in four of its United States patents regarding marine seismic streamer steering devices.

The trial began in July 2012. A verdict was returned by the jury in August 2012, finding that we infringed the claims contained in the four patents by supplying our DigiFIN® lateral streamer control units and the related software from the United States and awarded WesternGeco the sum of $105.9 million in damages, consisting of $12.5 million in reasonable royalties and $93.4 million in lost profits.

In June 2013, the presiding judge entered a Memorandum and Order, denying the Company's post-verdict motions that challenged the jury's infringement findings and the damages amount. In the Memorandum and Order, the judge also ruled that WesternGeco was entitled to be awarded supplemental damages for the additional DigiFIN units that were supplied from the United States before and after the trial that were not included in the jury verdict due to the timing of the trial. In October 2013, the judge entered another Memorandum and Order, ruling on the number of DigiFIN units that were subject to supplemental damages and also ruling that the supplemental damages applicable to the additional units were to be calculated by adding together the jury's previous reasonable royalty and lost profits damages awards per unit, resulting in supplemental damages of $73.1 million.

In April 2014, the judge entered another Order, ruling that lost profits should not have been included in the calculation of supplemental damages in the October 2013 Memorandum and Order and reducing the supplemental damages award in the case from $73.1 million to $9.4 million. In the Order, the judge also further reduced the damages awarded in the case by $3.0 million to reflect a settlement and license that WesternGeco entered into with a customer of ours that had purchased and used DigiFIN units that were also included in the damage amounts awarded against us.

In May 2014, the judge signed and entered a Final Judgment against us in the amount of $123.8 million. The Final Judgment also included an injunction that enjoins us, our agents and anyone acting in concert with us, from supplying in or from the United States the DigiFIN product or any parts unique to the DigiFIN product, or any instrumentality no more than colorably different from any of these products or parts, for combination outside of the United States. We have conducted our business in compliance with the District Court's orders in the case, and we have reorganized our operations such that we no longer supply the DigiFIN product or any part unique to the DigiFIN product in or from the United States.

We and WesternGeco each appealed the Final Judgment to the United States Court of Appeals for the Federal Circuit in Washington, D.C. (the "Court of Appeals"). On July 2, 2015, the Court of Appeals reversed in part the Final Judgment of the District Court, holding the District Court erred by including lost profits in the Final Judgment. Lost profits were $93.4 million and prejudgment interest on the lost profits was approximately $10.9 million of the $123.8 million Final Judgment. Pre-judgment interest on the lost profits portion will be treated in the same way as the lost profits. Post-judgment interest will likewise be treated in the same fashion. On July 29, 2015, WesternGeco filed a petition for rehearing en banc before the Court of Appeals. On October 30, 2015, the Court of Appeals denied WesternGeco's petition for rehearing en banc.

As previously disclosed, we recorded a loss contingency accrual of $123.8 million. As a result of the reversal by the Court of Appeals, as of June 30, 2015, we reduced our loss contingency accrual to $22.0 million.

On February 26, 2016, WesternGeco filed a petition for writ of certiorari by the Supreme Court. We filed our response on April 27, 2016. Subsequently, on June 20, 2016, the Supreme Court vacated the Court of Appeals' ruling although it did not address the lost profits question at that time. Rather, in light of the changes in case law regarding the standard of proof for willfulness in the Halo and Stryker cases, the Supreme Court indicated that the case should be remanded to the Court of Appeals for a determination of whether or not the willfulness determination by the District Court was appropriate.

On October 14, 2016, the Court of Appeals issued a mandate returning the case to the District Court for consideration of whether or not additional damages for willfulness were appropriate.

On November 14, 2016, the District Court ordered the sureties to pay principal and interest on the royalty damages previously awarded and declined to issue a final judgment until after consideration of whether enhanced damages for willfulness would be awarded. While we disagreed with the decision by the District Court ordering payment of the royalty damages and interest without a final judgment, on November 25, 2016, we paid WesternGeco the $20.8 million due pursuant to the order, at which point we reduced our loss contingency accrual to zero.

On March 14, 2017, the District Court held a hearing on whether or not additional damages for willfulness would be payable. The Judge found that ION's infringement was willful, based on his perception that ION did not adequately investigate the scope of the patents, and ION's conduct during trial. However, in his ruling at the hearing, he limited enhanced damages to $5.0 million because it was a "close case," there was no evidence of copying, and ION was simply acting as a competitor in a capitalist marketplace. The District Court also ordered the appeal bond to be released and discharged. The Court's findings and ruling were memorialized in an order issued on May 16, 2017. On June 30, 2017, WesternGeco and we jointly agreed that neither party would appeal the District Court's award of $5.0 million in enhanced damages. The parties also agreed that the $5.0 million would be paid over the course of 12 months. This agreement was memorialized by the court in an order issued on July 26, 2017. Upon assessment of the $5.0 million in enhanced damages, we accrued $5.0 million in the first quarter of 2017. As we have made the payments, the accrual has been adjusted, and as of June 30, 2018, the loss contingency accrual was zero.

WesternGeco filed a second petition for writ of certiorari in the U.S. Supreme Court on February 17, 2017, appealing the lost profits issue again. We filed our response to WesternGeco's second attempt to appeal to the Supreme Court the lost profits issue, raising both the substantive matters we addressed by opposing WesternGeco's first petition, and also advancing a procedural argument that WesternGeco could not raise the same issue for a second time in a second petition for certiorari. On May 30, 2017, the Supreme Court called for the views of the U.S. Solicitor General regarding whether or not to grant certiorari. We and WesternGeco each met with the Solicitor General's office in late July, 2017. On December 6, 2017, the Solicitor General filed its brief, and took the position that the Supreme Court ought to grant certiorari. On January 12, 2018, the Supreme Court granted certiorari as to whether the Court of Appeals erred in holding that lost profits arising from use of prohibited combinations occurring outside of the United States are categorically unavailable in cases where patent infringement is proven under 35 U.S.C. § 271(f)(2) (the specific statute under which we were ultimately held to have infringed WesternGeco's patents and upon which the District Court and the Court of Appeals relied in entering their final rulings).

The Supreme Court heard oral arguments on April 16, 2018. At oral arguments, we argued that the Court of Appeals' decision that eliminated lost profits ought to be affirmed. WesternGeco and the Solicitor General argued that the Court of Appeals' decision that eliminated lost profits ought to be reversed.

On June 22, 2018, the Supreme Court reversed the judgment of the Court of Appeals, held that the award of lost profits to WesternGeco by the District Court was a permissible application of Section 284 of the Patent Act, and remanded the case back to the Circuit Court for further proceedings consistent with its (the Supreme Court's) opinion. On July 24, 2018, the Supreme Court issued the judgment that returned the case to the Court of Appeals.

At the Court of Appeals, in the case leading up to the Supreme Court, we presented multiple arguments as to why the District Court's award of lost profits was improper. The lost profits damages awarded by the District Court were based on the use of our products by our customers outside of the United States. We argued at the Court of Appeals, and at the Supreme Court, that, as a matter of law, WesternGeco cannot recoup lost profits for the overseas use of our products. This issue, decided in favor of WesternGeco in the recent Supreme Court opinion, was the only issue reached by the Supreme Court in that decision.

We also argued in the Court of Appeals that, under the jury instructions given in our case, the jury was required to find that we had been a direct competitor of WesternGeco in the survey markets where WesternGeco lost profits in order for WesternGeco to recoup them. Because the Court of Appeals ruled in favor of us on the first argument, and overturned the award of lost profits on that basis, the Court of Appeals did not rule on our "direct competitor" argument, and that argument was not presented to the Supreme Court for review. Thus, while the Supreme Court overturned the Court of Appeals' decision that WesternGeco should not be allowed to recover foreign lost profits under the Patent Act, the Supreme Court did not order us to pay any amount with respect to lost profits, but rather remanded the case back to the Court of Appeals for further consideration of whether lost profits are payable by us in this case.

On July 25, 2018, we filed a motion for leave to file supplemental briefing in the Court of Appeals, and concurrently, filed a brief arguing that the judgment of the District Court as to both lost profits and reasonable royalties should be vacated, and that the case should be remanded to the District Court for a new determination on damages. On July 27, 2018, the Court of Appeals vacated its September 21, 2016 judgment with respect to damages, and ordered WesternGeco and ION to submit supplemental briefing on what relief is appropriate in light of the Supreme Court's

decision. This order rendered our motion for leave to submit briefing moot, and, accordingly, the Court of Appeals denied our motion as moot. ION and WesternGeco each submitted briefing in accordance with the Court of Appeals' order (with the last brief being filed with the Court of Appeals on September 7, 2018).

Other proceedings may have an impact on WesternGeco's ability to recover lost profits damages and reasonable royalties even if we do not prevail on the "direct competitor" argument in the Court of Appeals, and were addressed, along with the direct competitor argument, in the parties' briefing to the Court of Appeals (further described below). In particular, we were a party to a challenge to the validity of several of WesternGeco's patent claims by means of an Inter Partes Review ("IPR") with the Patent Trial and Appeal Board ("PTAB"). While the above-described lawsuit was pending on appeal, the PTAB invalidated four of the six patent claims that formed the basis for the jury verdict in the lawsuit. WesternGeco appealed that decision to the Court of Appeals, which heard the ION and WesternGeco's arguments on January 23, 2018. The Court of Appeals affirmed the PTAB's invalidation of the patents on May 7, 2018, and on July 16, 2018, the Court of Appeals denied WesternGeco's petition for a panel rehearing and a rehearing en banc. This decision by the Court of Appeals may provide a separate ground for reducing or vacating any lost-profits or reasonable royalty award in the lawsuit.

WesternGeco argued, in its pending briefs before the Court of Appeals, that the only issue that remains to be decided is whether lost profits are unavailable to WesternGeco due to our "direct competitor" argument, and argued that the invalidation of four of its six patent claims by the Court of Appeals (which invalidation WesternGeco intends to appeal to the Supreme Court) should have no effect on lost profits or on the royalty award we already paid. WesternGeco also argued that lost profits should be available notwithstanding our "direct competitor" argument.

We argued that lost profits are not available on the basis of the "direct competitor" argument, that the Court of Appeals' affirmation that four of the six patent claims at issue are invalid has a preclusive effect on WesternGeco's damages claims, and that the Court of Appeals should order a new trial as to the royalty damages we already paid. We argued, in the alternative, that if the Court of Appeals does not find our "direct competitor" argument persuasive, the Court of Appeals should nonetheless vacate the District Court's award of royalty damages and lost profits damages and order a new trial as to both royalty damages and lost profits.

On October 19, 2018, the Court of Appeals scheduled oral arguments for the issues we raised and WesternGeco in their briefs pending before that court. Oral arguments are scheduled to take place on November 16, 2018.

We may not ultimately prevail in any of the appeals processes noted above and we could be required to pay some or all of the lost profits that were awarded by the District Court if the judgment of the District Court is upheld by the Court of Appeals on remand, or if a new trial is granted and a new judgment issues. Our assessment that we do not have a loss contingency (other than the $1.25 million noted above) may change in the future due to other developments at the Supreme Court, Court of Appeals, or District Court, and other events, such as changes in applicable law, and such reassessment could lead to the determination that an additional loss contingency is probable, which could have a material effect on our business, financial condition and results of operations. Our assessments disclosed in this Quarterly Report on Form 10-Q or elsewhere are based on currently available information and involve elements of judgment and significant uncertainties. See above, Footnote 8 "Litigation" of Footnotes to Unaudited Condensed Financial Statements".

Other Litigation

We have been named in various other lawsuits or threatened actions that are incidental to our ordinary business. Litigation is inherently unpredictable. Any claims against us, whether meritorious or not, could be time-consuming, cause us to incur costs and expenses, require significant amounts of management time and result in the diversion of significant operational resources. The results of these lawsuits and actions cannot be predicted with certainty. We currently believe that the ultimate resolution of these matters will not have a material adverse effect on our financial condition or results of operations or our liquidity.

Item 1A. Risk Factors

This report contains or incorporates by reference statements concerning our future results and performance and other matters that are "forward-looking" statements within the meaning of Section 27A of the Securities Act of 1933, as amended ("Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended ("Exchange Act"). These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry's results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "would," "should," "intend," "expec

“plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” or “continue” or the negative of such terms or other compara terminology. Examples of other forward-looking statements contained or incorporated by reference in this report include statements regarding:

- any additional damages or adverse rulings in the WesternGeco litigation and future potential adverse effects on our liquidity;
- future levels of capital expenditures of our customers for seismic activities;
- future oil and gas commodity prices;

- the effects of current and future worldwide economic conditions (particularly in developing countries) and demand for oil and natural gas and seismic equipment and services;
- future cash needs and availability of cash to fund our operations and pay our obligations;
- the effects of current and future unrest in the Middle East, North Africa, Korea and other regions;
- the timing of anticipated revenues and the recognition of those revenues for financial accounting purposes;
- the effects of ongoing and future industry consolidation, including, in particular, the effects of consolidation and vertical integration in the towed marine seismic streamers market;
- the timing of future revenue realization of anticipated orders for multi-client survey projects and data processing work in our E&P Technology & Services segment;
- future levels of our capital expenditures;
- future government regulations pertaining to the oil and gas industry;
- expected net revenues, income from operations and net income;
- expected gross margins for our services and products;
- future benefits to be derived from the change in our OBS strategy and the success of marketing our 4Sea technology;
- future seismic industry fundamentals, including future demand for seismic services and equipment;
- future benefits to our customers to be derived from new services and products;
- future benefits to be derived from our investments in technologies, joint ventures and acquired companies;
- future growth rates for our services and products;
- the degree and rate of future market acceptance of our new services and products;
- expectations regarding E&P companies and seismic contractor end-users purchasing our more technologically-advanced services and products;
- anticipated timing and success of commercialization and capabilities of services and products under development and start-up costs associated with their development;
- future opportunities for new products and projected research and development expenses;
- expected continued compliance with our debt financial covenants;
- expectations regarding realization of deferred tax assets;
- expectations regarding the impact of the U.S. Tax Cuts and Jobs Act;
- anticipated results with respect to certain estimates we make for financial accounting purposes; and
- compliance with the U.S. Foreign Corrupt Practices Act and other applicable U.S. and foreign laws prohibiting corrupt payments to government officials and other third parties.

We rely on highly skilled personnel in our businesses, and if we are unable to retain or motivate key personnel or hire qualified personnel, we may not be able to grow effectively.

Our performance is largely dependent on the talents and efforts of highly skilled individuals. Our future success depends on our continuing ability to identify, hire, develop, motivate and retain skilled personnel for all areas of our organization. We require highly skilled personnel to operate and provide technical services and support for our businesses. Competition for qualified personnel required for our data processing operations and our other segments' businesses has intensified recently. Our growth has presented challenges to us to recruit, train and retain our employees while managing the impact of potential wage inflation and the lack of available qualified labor in some markets where we operate. A well-trained, motivated and adequately-staffed work force has a positive impact on our ability to attract and retain business. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate our existing employees.

These forward-looking statements reflect our best judgment about future events and trends based on the information currently available to us. Our results of operations can be affected by inaccurate assumptions we make or by risks and uncertainties known or unknown to us. Therefore, we cannot guarantee the accuracy of the forward-looking statements. Actual events and results of operations may vary materially from our current expectations and assumptions.

Information regarding factors that may cause actual results to vary from our expectations, referred to as “risk factors,” appears in our Annual Report on Form 10-K as amended for the year ended December 31, 2017, in Part I, Item 1A. “Risk Factors,” as previously filed with the SEC.

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

(c) During the three months ended September 30, 2018, in connection with the vesting of (or lapse of restrictions on) shares of our restricted stock held by certain employees, we acquired shares of our common stock in satisfaction of tax withholding obligations that were incurred on the vesting date. The date of acquisition, number of shares and average effective acquisition price per share were as follows:

Period	(a) Total Number of Shares Acquired	(b) Average Price Paid Per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Program	(d) Maximum Number (or Approximate Dollar Value) of Shares That May Yet Be Purchased Under the Plans or Program
July 1, 2018 to July 31, 2018	—	—	Not applicable	Not applicable
August 1, 2018 to August 31, 2018	—	$ —	Not applicable	Not applicable
September 1, 2018 to September 30, 2018	—	$ —	Not applicable	Not applicable
Total	—	$ —		

Item 5. Other Information

None.

Item 6. Exhibits

31.1	Certification of Chief Executive Officer
31.2	Certification of Chief Financial Officer
32.1	Certification of Chief Executive Officer
32.2	Certification of Chief Financial Officer
10.23	Third Amendment and Joinder to the Revolving Credit and Security Agreement, dated as of August 16, 2018, filed on August 21, 2018 as Exhibit 10.1 to the Company's Current Report on Form 8-K and incorporated by reference.
101	The following materials are formatted in Extensible Business Reporting Language (XBRL): (i) Condensed Consolidated Balance Sheets as of September 30, 2018 and December 31, 2017, (ii) Condensed Consolidated Statements of Operations for the three- and nine-months ended September 30, 2018 and 2017, (iii) Condensed Consolidated Statements of Comprehensive Income (Loss) for the three- and nine-months ended September 30, 2018 and 2017, (iv) Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2018 and 2017, (v) Footnotes to Unaudited Condensed Consolidated Financial Statements.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ION GEOPHYSICAL CORPORATION

By /s/ Steven A. Bate
Steven A. Bate
Executive Vice President and Chief Financial Officer

Date: November 2, 2018

EXHIBIT INDEX

Exhibit No.	Description
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