pulse seismic

TSX: PSD
OTCQX: PLSDF

2020 Year-End Financial Report

FINANCIAL HIGHLIGHTS

(thousands of dollars except per share data, numbers of shares and kilometres of seismic data)	Three months ended December 31,		Years ended December 31,	
	2020	2019	**2020**	2019
Revenue				
Data library sales	**5,142**	5,281	**11,011**	23,635
Other revenue	**81**	83	**338**	520
Total revenue	**5,223**	5,364	**11,349**	24,155
Amortization of seismic data library	**2,493**	3,500	**11,348**	14,200
Net earnings (loss)	**287**	(759)	**(6,786)**	(3,411)
Per share basic and diluted	**0.01**	(0.01)	**(0.13)**	(0.06)
Cash provided by operating activities	**752**	1,127	**3,814**	8,605
Per share basic and diluted	**0.01**	0.02	**0.07**	0.16
Cash EBITDA[(a)]	**4,178**	3,879	**7,468**	17,557
Per share basic and diluted[(a)]	**0.08**	0.07	**0.14**	0.33
Shareholder free cash flow[(a)]	**2,978**	2,981	**5,373**	13,605
Per share basic and diluted[(a)]	**0.06**	0.06	**0.10**	0.25
Capital expenditures				
Seismic data purchases, digitization and related costs	**96**	–	**383**	61,029
Property and equipment	**–**	41	**7**	439
Total capital expenditures	**96**	41	**390**	61,468
Weighted average shares outstanding				
Basic and diluted	**53,793,317**	53,793,317	**53,793,317**	53,793,317
Shares outstanding at period-end			**53,793,317**	53,793,317
Seismic library				
2D in kilometres			**829,207**	829,207
3D in square kilometres			**65,310**	65,310

FINANCIAL POSITION AND RATIOS

(thousands of dollars except ratios)	**December 31, 2020**	December 31, 2019
Working capital	**5,601**	687
Working capital ratio	**3.6:1**	1.1:1
Cash and cash equivalents	**–**	1,356
Total assets	**56,742**	69,504
Long-term debt	**27,715**	31,511
Cash EBITDA	**7,468**	17,557
Shareholders' equity	**25,266**	31,973
Long-term debt to cash EBITDA ratio	**3.71**	1.79
Long-term debt to equity ratio	**1.10**	0.99

(a) This non-GAAP financial measure is defined, calculated and reconciled to the nearest GAAP financial measures in the Management's Discussion and Analysis.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

YEAR ENDED DECEMBER 31, 2020

The Annual Meeting of Shareholders of Pulse Seismic Inc. will be held on Thursday, April 22, 2021 at 3:00 p.m. MDT in the Pulse Seismic head office, located at 421 – 7th Avenue S.W., Suite 2700, Calgary, Alberta.

CONTENTS

Overview 2

Covid-19 Impact on the Company's Operations and Risks 3

Corporate Update 4

Key Performance Indicators 5

Acquisition of Seitel Canada Ltd. 6

Seismic Revenue Fluctuations 6

Outlook 6

Discussion of Operating Results 8

Review of Financial Position 13

Financial Summary of Quarterly Results 16

Selected Annual Financial Information 17

Traditional Sales vs. Transaction-Based Sales: Ten-Year History 17

Contractual Obligations 18

Liquidity, Capital Resources and Capital Requirements 18

Non-Capital Resources 21

Non-GAAP Financial Measures and Reconciliations 21

Financial Instruments 23

Critical Accounting Estimates 24

Disclosure Controls and Procedures (DC&P) and Internal Controls over Financial Reporting (ICFR) 26

Risk Factors 26

Additional Information 29

Forward-Looking Information 29

The following Management's Discussion and Analysis (MD&A) of the financial condition and results of operations of Pulse Seismic Inc. ("Pulse" or "the Company") for the year ended December 31, 2020 was prepared taking into consideration information available to February 17, 2021 and is supplemental to the audited consolidated financial statements and related notes for the year ended December 31, 2020. Throughout this MD&A reference will be made in the text and tables to "2020", which refers to the year ended December 31, 2020, and to "2019", which refers to the year ended December 31, 2019.

The consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS) with comparative figures for the prior year. The consolidated financial statements and the MD&A were reviewed by Pulse's Audit and Risk Committee and approved by Pulse's Board of Directors. All financial information is reported in Canadian dollars. This MD&A discusses matters which Pulse's management considers material. Management determines whether information is material based on whether it believes a reasonable investor's decision whether or not to buy, sell or hold shares in the Company would likely be influenced or changed if the information were omitted or misstated. Readers should also read the cautionary statement in "Forward-Looking Information".

OVERVIEW

ABOUT PULSE

Pulse is a market leader in the acquisition, marketing and licensing of two-dimensional (2D) and three-dimensional (3D) seismic data for the energy sector in Western Canada. Seismic data is used by oil and natural gas exploration and development companies to identify portions of geological formations that have the potential to hold hydrocarbons. Seismic data is used in conjunction with well logging data, well core comparisons, geological mapping and surface outcrops to create a detailed map of the Earth's subsurface at various depths.

Pulse owns the largest licensable seismic data library in Canada, currently consisting of approximately 65,310 net square kilometres of 3D seismic and 829,207 net kilometres of 2D seismic. The library extensively covers the Western Canada Sedimentary Basin (WCSB), where most of Canada's oil and natural gas exploration and development occur.

Pulse calculates net kilometres of 2D data and net square kilometres of 3D data by multiplying the number of kilometres of seismic data in each 2D line and the number of square kilometres of seismic data in each individual 3D seismic dataset by Pulse's percentage of ownership in each.

SEISMIC DATA

Seismic data is an essential part of the oil and natural gas exploration and development process. Companies engaged in oil and natural gas exploration and development use seismic data to assist in exploring for and developing new reserves and in establishing the extent of existing reserves. In acquiring seismic data, acoustical energy waves are transferred from an energy source at or near the surface of the Earth to the subsurface. The seismic waves reflect off various geological beds or strata in the Earth's subsurface. Sophisticated sensors and recording instruments at the surface collect the reflected waves and convert them to digital form. The data is subsequently processed and an image of the subsurface formations is created, providing explorationists with valuable insight into the potential of a particular area to yield oil or natural gas reserves, and assisting in the selection of drilling locations.

2D SEISMIC

2D seismic data is measured in linear kilometres and after processing provides a sectional illustration of geological formations directly below the line on which the data was acquired. 2D seismic can extend over a distance spanning many kilometres. Intersecting 2D lines can enable explorers to map large pools of oil and natural gas, but without the precision required for smaller or more complex targets. Exploration companies typically use 2D seismic to get a sense of the regional geology of an area they think is prospective for oil and natural gas. 2D seismic data continues to be used to generate regional leads and prospects in oil and natural gas exploration areas.

3D SEISMIC

3D seismic data is measured in square kilometres and after processing provides map-like overhead views as well as three-dimensional visualizations of the subsurface geology. 3D seismic data is shot in grids, generating a three-dimensional image of the subsurface. 3D seismic data enables a more precise definition of geologically complex targets, facilitating precise placement of oil and natural gas wells. 3D seismic is generally used to zero-in on a discrete area of geological interest initially identified with 2D seismic. 3D seismic data is particularly important for horizontal drilling, unconventional plays (such as shale gas and tight sands) and complex conventional drilling. Typical 3D seismic surveys cover an area anywhere from a few square kilometres to several hundred square kilometres.

MISSION AND STRATEGY

Pulse is a pure-play seismic data library company focused on the acquisition, marketing and licensing of seismic data to the western Canadian oil and natural gas sector. The Company's business model is designed to generate a growing stream of cash flow by repeatedly licensing the data in its seismic data library to oil and natural gas companies. Pulse's strategy is to pursue growth opportunities that meet its financial and technical criteria while maintaining a low cost structure.

Current seismic processing and visualization software allows historical 2D and 3D data to be reprocessed and reinterpreted, thereby maintaining the technical usefulness and marketability of historical data and, through repeated licensing sales, generating recurring revenue. The Company is continuously seeking and evaluating opportunities to expand its data library by acquiring high-quality 2D and 3D datasets that cover some of western Canada's most prospective current exploration regions, are complementary to its current library, and are available at favourable valuations. This is accomplished in two ways. Pulse purchases proprietary rights to complementary 2D and 3D seismic datasets, and it partners with customers on surveys for new 3D seismic data when opportunities arise. Participating customers are provided with a licensed copy while Pulse retains proprietary rights to the seismic data acquired. Pulse uses Company personnel to market and manage participation surveys, and subcontracts field acquisition activities to third parties.

ECONOMIC ENVIRONMENT AND SEISMIC INDUSTRY

Pulse has been successful throughout prior commodity price cycles, due to its low cost structure, access to capital for funding growth initiatives and ability to generate a high level of shareholder free cash flow relative to revenue. Shareholder free cash flow is a non-GAAP measure that the Company considers important in evaluating its financial performance.

Pulse's success depends on its ability to provide seismic coverage over the geographical areas associated with certain geological development areas or "play types" that the exploration and development sector focuses on in a given period. Activity in various plays is driven by commodity prices, geological understanding, the economic application of available and improving technologies and the availability of oil and natural gas processing and transportation egress ("take-away") capacity at reasonable cost. Pulse has worked diligently through the years to enlarge its coverage.

The oil and natural gas exploration and development industry currently is mainly targeting natural gas reservoirs that are high in natural gas liquids and light crude oil, lying in unconventional shale and less-permeable or tight formations. 2D and 3D seismic data are important tools for these plays. 2D seismic data is used to map the regional faults in shale gas prospects and 3D seismic data is used to map the exact contours of variable reservoirs, as well as small-scale fractures in shale formations, to plan accurate paths for horizontal wells.

Pulse's business results depend to a large extent on the level of capital spending on exploration activities by oil and natural gas companies. A sustained increase or decrease in the price of natural gas or crude oil, therefore, which could have a material impact on exploration activities, could also materially affect the Company's revenue, financial position, results of operations, cash EBITDA and shareholder free cash flow. The relationship is not direct, however, and the Company has generated high revenue in periods of weak oil and natural gas prices and vice-versa.

COVID-19 IMPACT ON THE COMPANY'S OPERATIONS AND RISKS

In March 2020 the COVID-19 outbreak was recognized as a pandemic. In addition, global commodity prices declined significantly due to disputes between major oil-producing countries, combined with the pandemic's impact on global oil demand. Governments worldwide, including those in Canada, enacted emergency measures to combat the spread of the virus. These measures included travel bans, quarantine periods, shutdowns of numerous businesses and economic sectors, and social distancing, causing material disruption to businesses globally, resulting in a severe economic slowdown. Governments and central banks reacted with significant monetary and fiscal interventions designed to stabilize economic conditions. Global commodity prices improved in the latter half of 2020 as economies reopened to varying degrees and production cuts were reached by OPEC, which revived spending in the oil and natural gas industry. More recently, the Government of Canada government approved two COVID-19 vaccines (as of year-end 2020), with a modest number of vaccinations beginning very late in the year. Severe restrictions remain on the economy, however, in an effort to prohibit the spread of COVID-19, and it remains uncertain when the global economy will return to conditions prevailing prior to COVID-19. This uncertainty continues to dampen global commodity pricing, with some exceptions, which has influenced the current challenging economic climate for the Company.

In the fourth quarter of 2020, the Company benefited from the Canada Emergency Wage Subsidy (CEWS) in the amount of $94,000, bringing the total benefit to $451,000 in 2020. All amounts were received by December 31, 2020. In the fourth quarter of 2020, the Company also benefited from the Canada Emergency Rent Subsidy (CERS) in the amount of $124,000. All amounts were received in January 2021.

If these conditions persist for an extended period, there may continue to be significant adverse impacts on the Company, including but not limited to:

- Material declines in revenue and cash flows as the Company's customers, which are concentrated in the oil and natural gas industry, further cut capital budgets and reduce field activities;
- Declines in revenue that could, in turn, result in an impairment charge against the Company's seismic data library asset; and
- Non-performance by the Company's customers, in turn resulting in non-payment of accounts receivable and customer defaults.

The situation surrounding COVID-19 remains dynamic and the duration and magnitude of the economic impact and financial effects on the Company cannot be determined. Estimates and judgements made by management in the preparation of the financial statements are difficult and subject to a higher degree of measurement uncertainty during this volatile period.

In 2020, management and the Board of Directors took cost-cutting measures in response to low sales revenue and the expectation that sales could remain low. Pulse implemented salary reductions ranging from 7.5 percent to 20 percent for all of its employees. Director's fees for the chair of the Board of Directors were reduced by 50 percent and all other independent directors' fees were reduced by 40 percent. All administrative and operating expenses and capital spending plans have been evaluated and reduced where appropriate. As noted above, the Company also applied and received the CEWS for its 16 employees and the CERS for its three property leases.

Pulse remains committed to the health and safety of its employees. In response to the public health measures associated with the pandemic, Pulse implemented its disaster recovery plan and the downtown office staff began working remotely on March 13, 2020. On July 6, 2020 a small number of staff returned to work in the downtown office, with strict policies and procedures for the health and safety of these employees. In addition, the Company has a small group working at its warehouse facility. The guidance of health authorities continues to be closely monitored and Pulse intends to have approximately one-third of its 16 staff continue to work remotely for the foreseeable future. Pulse's business is supplying licences to a digitally-based product, seismic data and, as a result, the combination of staff working in the office and remotely allows for timely responses to customers' needs. The Company's top priorities continue to be the safety of its employees, preserving cash and protecting the balance sheet while weathering these uncertain and unprecedented times.

CORPORATE UPDATE

At December 31, 2020 the Company was in compliance with all covenants related to its credit facility. In January 2019 Pulse borrowed a total of $38.0 million to partially fund the acquisition of Seitel Canada Ltd. (Seitel). The indebtedness included approximately $23.0 million in senior debt from its then-syndicated credit facility, $10.0 million in subordinated debt and an additional sales-based deferred payment of $5.0 million due to the vendor of Seitel. The acquisition more than doubled the size of Pulse's seismic data library, which the Company believes has doubled the opportunity set for future sales. At December 31, 2020 the balance owing on the debt was $28.0 million, of which $18.0 million was due on the Company's senior credit facility and $10.0 million was subordinated debt. The sales-based deferred payment was fully satisfied by mid-2019.

With uncertainty continuing as to the length and severity of the oil and natural gas industry downturn and the pandemic, in June 2020 Pulse negotiated with the lead bank of its syndicated credit facility an amendment to its financial covenants to ensure additional flexibility in future quarters. In December 2020, Pulse amended and restated its senior credit facility, now with a single lender, with additional adjustments to certain ratios to ensure additional flexibility in future quarters. Changes are disclosed below in "Liquidity, Capital Resources and Capital Requirements".

KEY PERFORMANCE INDICATORS

The key performance indicators used by Pulse's management to analyze business results are seismic data library sales, net earnings, cash EBITDA and shareholder free cash flow. The definitions, calculations and reconciliations of cash EBITDA and shareholder free cash flow to the nearest GAAP financial measures are provided in "Non-GAAP Financial Measures and Reconciliations".

Results for the key performance indicators for the three months and year ended December 31, 2020, with comparative figures for 2019, are set out in the following table:

	Three months ended December 31,			Years ended December 31,		
(thousands of dollars except per share data)	**2020**	2019	Variance	**2020**	2019	Variance
Data library sales	**5,142**	5,281	(139)	**11,011**	23,635	(12,624)
Other revenue	**81**	83	(2)	**338**	520	(182)
Total seismic revenue	**5,223**	5,364	(141)	**11,349**	24,155	(12,806)
Net earnings (loss)	**287**	(759)	1,046	**(6,786)**	(3,411)	(3,375)
Per share basic and diluted	**0.01**	(0.01)	0.02	**(0.13)**	(0.06)	(0.07)
Cash generated by operating activities	**752**	1,127	(375)	**3,814**	8,605	(4,791)
Per share basic and diluted	**0.01**	0.02	(0.01)	**0.07**	0.16	(0.09)
Cash EBITDA	**4,178**	3,879	299	**7,468**	17,557	(10,089)
Per share basic and diluted	**0.08**	0.07	0.01	**0.14**	0.33	(0.19)
Shareholder free cash flow	**2,978**	2,981	(3)	**5,373**	13,605	(8,232)
Per share basic and diluted	**0.06**	0.06	0.00	**0.10**	0.25	(0.15)

In 2020 the Company experienced low data library sales. The COVID-19 pandemic and the collapse of commodity prices in the first quarter caused Pulse's customers to further reduce capital expenditures in Canada. Quarterly sales have fluctuated greatly since the end of 2014, due to the reduced capital spending in the energy-producing sector. Given the approximate doubling of licensable seismic data in the library since the major acquisition of Seitel in the first quarter of 2019, by comparison to prior years, data sales declined further in 2020.

The decrease in 2020 data library sales from 2019 is the main factor contributing to the period-over-period decrease in all the Company's key performance metrics.

For the three months ended December 31, 2020, Pulse generated $5.2 million of revenue compared to $5.4 million for the same period in 2019. The 2020 fourth quarter's revenue included $4.6 million in transaction-based data library sales related to mergers and acquisitions.

With fourth quarter 2019 and 2020 data library sales being very similar, the reduction of $1.0 million in amortization expense during the three months ended December 31, 2020 compared to the same period of 2019 is the main factor contributing to the period-over-period improvement in net earnings. Cash EBITDA improved in the fourth quarter of 2020 mainly due to the reductions in salaries, internal commissions and benefits (SCB) and other selling, general and administrative costs (SG&A) expenses that were implemented through the year. Shareholder free cash flow for the three months ended December 31, 2020 was almost equal to the shareholder free cash flow for the three months ended December 31, 2019, with higher current tax expense in the 2020 period being offset by decreased financing costs from the 2019 fourth quarter.

ACQUISITION OF SEITEL CANADA LTD.

On January 15, 2019 the Company acquired 100 percent of the shares of Seitel for initial cash consideration of $53.6 million paid at closing plus an additional payment of up to $5.0 million, in the aggregate, within two years of closing. Pulse also assumed an estimated $4.2 million in additional future liabilities.

The acquisition more than doubled the size of the Company's seismic data library, making it the largest provider of licensable seismic data to the oil and natural gas industry in the Western Canada Sedimentary Basin.

The assets of Seitel, a privately held company, consisted primarily of its 2D and 3D seismic data library in Western Canada. The acquired seismic data library includes approximately 36,354 net square kilometres of 3D data and 379,207 net kilometres of 2D data. Pulse more than doubled its 3D library to be the owner of approximately 65,310 net square kilometres and nearly doubled the 2D library to approximately 829,207 net kilometres. The acquisition was completed pursuant to the terms of a share purchase agreement dated January 15, 2019.

The acquired seismic data is unique and complementary to Pulse's data, with minimal overlap in the most valuable asset, the 3D library, and only a small percentage of overlap in the 2D library.

The initial consideration of $53.6 million was paid in cash and financed by a combination of Pulse's cash on hand of $20.6 million and $33.0 million of debt. In connection with the acquisition, Pulse amended and restated its syndicated credit agreement. The facilities were comprised of $15.0 million in term debt, all of which was utilized for the acquisition, and a $30.0 million revolving facility, $8.0 million of which was drawn for the acquisition.

Further, the Company entered into a five-year subordinated debt agreement with EdgePoint Investment Group Inc. for an additional $10.0 million which matures on December 31, 2023. The agreement terms and conditions are competitive and, market-based. The agreement has no requirement to repay the principal prior to the end of term.

The balance of $5.0 million due to the vendor was paid during 2019 from cash collected from sales revenue generated from the former Seitel database.

As stated, above, Pulse amended its credit facility twice in 2020 to ensure flexibility in future quarters, given the ongoing impact of the pandemic.

SEISMIC REVENUE FLUCTUATIONS

Revenue fluctuations are a normal part of the seismic data library business, and data library sales can vary significantly year-over-year.

Traditional data library sales can occur at any time. This is due to the nearly continual changes in oil and natural gas industry conditions, sudden or increased demand for seismic data covering a specific area or play, and the timing of public offerings of petroleum and natural gas rights (land sales).

Transaction-based sales can also occur at any time. This is due to corporate merger-and-acquisition, joint venture and asset disposition activity involving Pulse's customers, which is unpredictable.

OUTLOOK

In weathering the COVID-19 storm of 2020, Pulse proved its survivability under the worst conditions. Having further reduced its costs throughout the year, continued to generate cash EBITDA and shareholder free cash flow, simplified its credit facility and, as of February 17, 2021, reduced total debt to only $20.2 million, Pulse came out of this exceptionally weak and uncertain year in a stronger overall position than when it entered. Despite ongoing industry weakness, the Company therefore feels solidly positioned for a range of potential industry conditions and business results in 2021. Following its modest uptick in sales during the fourth quarter of 2020, Pulse's sales in the first six weeks of this year have already totalled $4.3. million.

Given the continuation of the COVID-19 pandemic, uncertainty is higher than at the beginning of last year, and the Company has no visibility as to traditional or transaction-based sales. An extensive discussion of industry and economic conditions and traditional indicators of seismic licensing activity is, accordingly, moot.

A few points can be made:

- In mid-January, the Canadian Association of Petroleum Producers (CAPP) forecast that oil and natural gas industry capital spending outside the oil sands would increase by 16 percent year-over-year to $20 billion in 2021 from $17.2 billion in 2020 (CAPP's original 2020 forecast was for $25 billion in spending);
- Forecasts for oil and natural gas drilling remain very low, up only slightly from the extremely poor results in 2020;
- Mineral lease auctions or "land sales" in Alberta and B.C. remain at or near record-lows, with B.C. having cancelled all postings in March of last year, with a restart expected next month;
- Natural gas and crude oil prices are at relatively favourable levels, although outlooks remain mixed;
- Merger-and-acquisition activity and aggregate transaction value in Canada's oil and natural gas industry are expected to continue the upward trend begun last year, increasing the potential for transaction-based sales of Pulse's seismic library data which, however, always remain unpredictable as to timing and size;
- Key industry infrastructure projects, including the Trans Mountain Pipeline expansion for international crude oil exports, and Canada's first liquefied natural gas (LNG) export facility, are continuing to move ahead;
- The Government of Alberta's acceleration of its reduction to the provincial corporate income tax rate to 8 percent took effect at mid-year 2020, which will benefit full-year income tax rates for taxpaying Alberta-based corporations in 2021; and
- U.S. LNG exports have continued to grow and are forecast to average 8-10 billion cubic feet per day in 2021, with an additional approximately 5 billion cubic feet per day in pipeline exports to Mexico, which will be positive for domestic American gas pricing and, in turn, for Canadian and natural gas exports into the U.S. market.

Pulse's strengths and advantages include:

- Ownership of the largest licensable seismic dataset in Western Canada, providing exceptional exposure to any rebound in industry activity;
- A low cost structure;
- A strong cash EBITDA margin (68 percent of data library sales in 2020) as well as continuing positive cash EBITDA and shareholder free cash flow, even were 2021 sales to be unchanged from 2020;
- Low indebtedness on favourable terms, with bank and subordinated debt totalling only $20.2 million as of this date, and no principal payments required before January 2023;
- Unused borrowing capacity of $14.8 million as of this date;
- Long term relationships with supportive senior and subordinated creditors;
- An experienced, proven and efficient team of senior management and employees; and
- An experienced and supportive Board of Directors.

As stated, Pulse's outlook for 2021 remains cautious. Above all the Company is intent on maintaining its strength and flexibility in order to be able to weather, adapt to or profit from virtually any conditions, ranging from further extended weakness to a strong recovery. Over the coming quarters Pulse intends to continue paying down bank debt, to manage its costs conservatively and to remain stringent in assessing potential new opportunities.

Many of the remaining Canadian oil and natural gas producers are in better financial condition than the overall industry was over the previous several years, although a significant number of producers remain focused on repairing their balance sheets. Accordingly, it remains uncertain whether, when and how much these companies will begin reinvesting their cash flow plus new capital to resume growing, and when investment conditions might become attractive enough to draw new entrants to the Western Canada Sedimentary Basin. This dynamic will determine activity levels, demand for seismic data and Pulse's sales. The broad coverage of its seismic database makes Pulse's revenue, cash margin and shareholder free cash flow highly levered to any uptick in industry field activity and demand for seismic data.

In summary, Pulse is equally well-positioned to weather additional quarters of weaker industry activity, to benefit from an industry rebound, to use an episodic increase in seismic data licensing sales to the benefit of its shareholders, or to act on further opportunities to increase the size of its seismic data library. With its reduced indebtedness, new banking facility, positive start to 2021 sales and the widespread expectation of higher merger-and-acquisition activity, the Company is in an excellent position to benefit from any industry recovery.

DISCUSSION OF OPERATING RESULTS

SUMMARY FOR YEAR ENDED DECEMBER 31, 2020

LOSS BEFORE INCOME TAXES

Pulse incurred a loss before income taxes of $6.6 million ($0.12 per share basic and diluted) in 2020 compared to a loss before income taxes of $2.2 million ($0.04 per share basic and diluted) for 2019.

DATA LIBRARY SALES

Data library sales are conducted under various types of sale contracts. These are classified as data library sales, library cards (discount agreement, paid on predetermined payment terms with periods of up to one year to select data), commitment cards (discount agreement, paid when data is selected and delivered within a one-year period) and review-and-possession agreements (client is provided with data to review and selects a portion of this data to license long-term, with the agreement often having set payment terms). Pulse plans to continue providing customers with a variety of contract options in order to maximize future data library sales. The unearned portion of a contract's value is deferred until Pulse's revenue recognition criteria are met, with data library sales revenue being recognized upon delivery of seismic data to the customer.

Data library sales consist of traditional sales and transaction-based sales. There are three main types of transaction-based sales: corporate merger or acquisition sales, partnership or joint venture sales, and asset disposition-related sales. For further information on transaction-based sales, see "Traditional Sales vs. Transaction-based Sales: Ten-Year History".

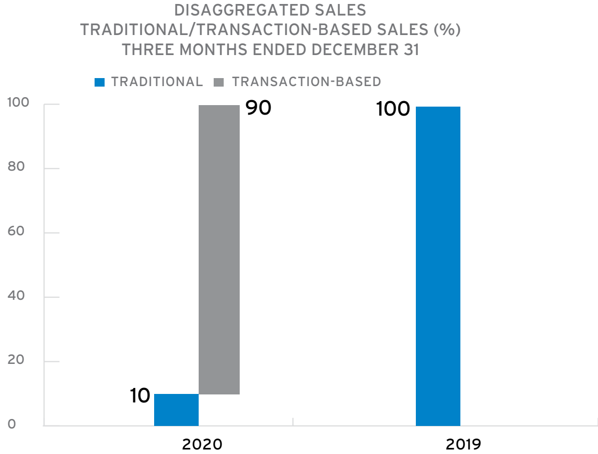
For 2020, seismic data library sales were $11.0 million compared to $23.6 million in 2019. Actual data sales for 2019 were $24.0 million, but sales revenue of approximately $374,000 was deferred as a result of the extended payment terms for a portion of the $7.0 million sale recorded in the second quarter of 2019 and another smaller sale made in November. The $374,000 will be recorded as interest income between the date of each sale and the collection of the payments in 2021 and 2022. The trade and other receivables are presented net of the interest balance at December 31, 2020.

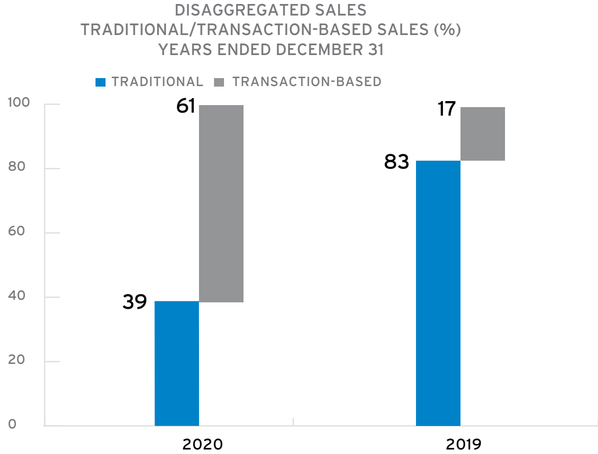
As explained above, the year-over-year decrease in the data library sales is the result of the COVID-19 pandemic and the associate, collapse of commodity prices leading Pulse's customers to further reduce capital expenditures.

DISAGGREGATED DATA LIBRARY SALES BREAKDOWN

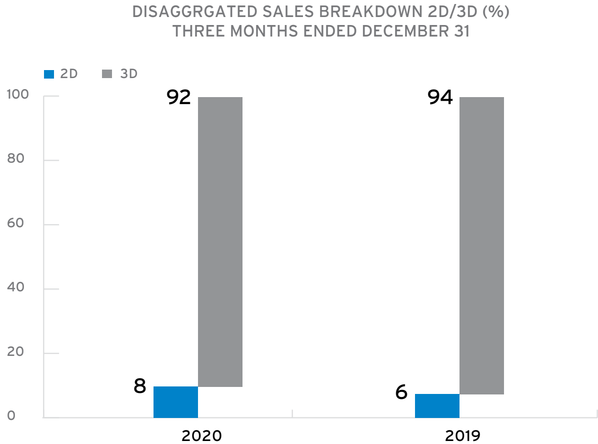
Pulse uses three ways to disaggregate its data library sales. The following graphs illustrate the comparative disaggregated sales for the three-and twelve-month periods ended December 31, 2020 and 2019.

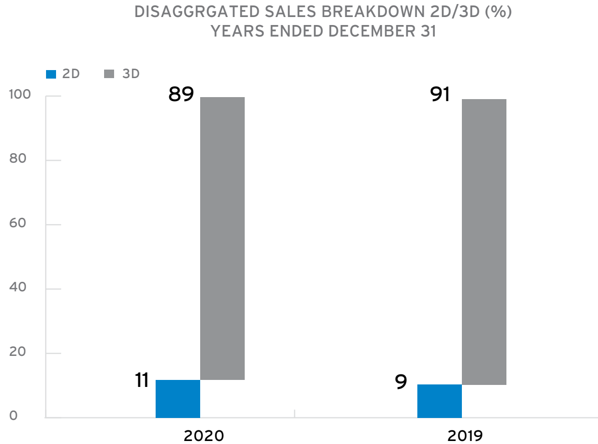
The first breakdown, transaction type, separates sales between traditional and transaction-based sales. These two types fluctuate greatly from period to period and year to year. A ten-year historical breakdown is provided in "Traditional Sales vs. Transaction-Based Sales: Ten-Year History".



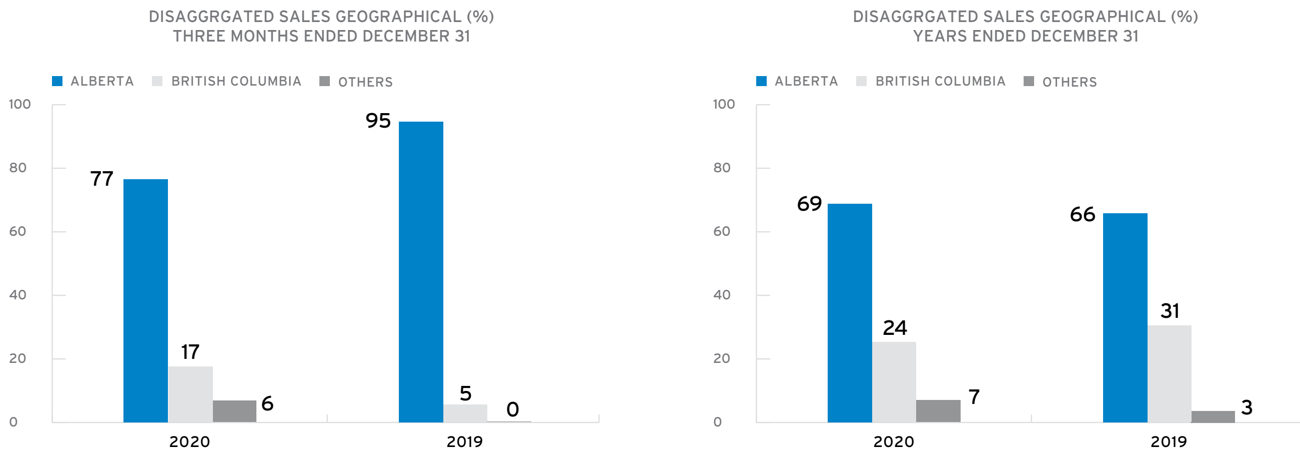


The second breakdown, data type, compares sales of 2D and 3D seismic data. As 3D seismic licence contracts are generally larger than 2D seismic licence contracts, the percentage of seismic data library revenues generated from 2D and 3D seismic data can fluctuate significantly depending on the number of 3D seismic sale contracts signed during a given period.





The third breakdown is geographical. The largest proportion of data sales usually comes from data in Alberta, as that is where the majority of Pulse's data coverage and current industry activity are. The $7.0 million deal in the second quarter of 2019 was for data located in British Columbia.



The Company's customers are currently and generally focusing on liquids-rich natural gas and light oil pools found primarily in a broad corridor running from northwest of Calgary, Alberta, along the Foothills of the Rocky Mountains to the British Columbia border, as compared to "dry" natural gas more often found in British Columbia, on Alberta's eastern prairies and in Saskatchewan and Manitoba. During the year ended December 31, 2020, 69 percent (2019 – 66 percent) of the data library sales were from data located in Alberta, 24 percent from British Columbia (2019 – 31 percent) and 7 percent from other areas (2019 – 3 percent).

AMORTIZATION OF SEISMIC DATA LIBRARY

Seismic data library amortization expense was $11.3 million for 2020 compared to $14.2 million in 2019. The significant decrease is due to certain data acquired in previous years becoming fully amortized in the first quarter of 2020.

Amortization of the seismic data library is described further under "Critical Accounting Estimates".

IMPAIRMENT

At December 31, 2020, the Company assessed the cash-generating units (CGUs) in its seismic data library for indicators of impairment, as required under IFRS, and concluded there were no new indicators at December 31, 2020 and that, accordingly, no impairment test was required.

At March 31, 2020, the Company assessed the CGUs in its seismic data library for indicators of impairment, as required under IFRS, and concluded there were such indicators. The principal indicator was the significant reduction in commodity prices along with uncertainty over the timing of any improvement, in conjunction with the COVID-19 pandemic and its impact on the global economy. Those indicators triggered an impairment test on the Seitel data library CGU. For the purpose of impairment testing, the recoverable amount of a Company's CGU is the greater of its value-in-use and its fair value less costs to sell. The recoverable amount of the Seitel CGU was determined based on a value-in-use calculation. The Company used the following assumptions for this calculation:

- The estimated future cash flows for the next five years net of variable and fixed costs with a terminal valuation applied. The forecast is based on past performance as well as management's assessment of economic conditions, expected market trends and anticipated activity levels of the Western Canadian oil and natural gas sector;
- The terminal value of the Seitel CGU, estimated to be 40 percent of the 2024 cash flows, with a decline rate of 2 percent;

- An after-tax discount rate of 11 percent to calculate the net present value of future cash flows, which is the weighted average cost of capital calculated at March 31, 2020; and
- A combined federal-provincial income tax rate of 25 percent.

Based on these assumptions and the Company's calculations, no impairment loss was incurred.

SALARIES, COMMISSIONS AND BENEFITS

SCB includes salaries, related benefits, incentive compensation and internal commissions. For 2020, SCB was $2.5 million, a decrease of $1.8 million from $4.3 million in 2019.

The significant decrease in 2020 is largely accounted for by the $700,000 acquisition bonus paid in the first quarter of 2019 to Pulse executives and staff for the completion of the Seitel acquisition and integration. In addition, in 2020 all staff salaries were reduced, the Company received CEWS and the accounting expense related to the employee long-term incentive plans, which takes into consideration the Pulse share price, decreased year-over-year.

OTHER SELLING, GENERAL AND ADMINISTRATIVE COSTS

SG&A includes external commissions, occupancy costs, office and general costs, information technology expenses, reprocessing, data storage expenses, directors' fees and corporate costs, consulting fees and professional fees. For 2020, SG&A was $1.3 million, a decrease of $750,000 from $2.0 million in 2019. The decrease is partially due to lower corporate reporting expenses in 2020 than in the first half of 2019, which had increased due to the Seitel acquisition, along with significant reductions in most expense categories in 2020, as the Company navigated the low sales environment and high level of uncertainty. The Company also reversed a bad debt expense from the prior year when the collection of an outstanding trade receivable occurred in July. Compensation for the Board of Directors was also reduced. Director's fees for the chair of the Board of Directors were reduced by 50 percent and all other independent directors' fees were reduced by 40 percent. The Company also received federal CERS payments.

RESTRUCTURING COSTS

Restructuring costs for 2020 were $203,000 compared to $2.7 million for 2019. The following expenses were included in 2019: $1.5 million of severance payments related to the acquired company in January 2019, audit fees related to regulatory reporting of the Seitel acquisition, expenses related to the Seitel warehouse lease, increased marketing costs and minor SG&A expenses related to Seitel integration. The CERS also contributed to the reduction in the restructuring costs.

These additional costs were categorized as restructuring costs and make up part of the expected $4.2 million in future liabilities as outlined in previous acquisition-related disclosure.

NET FINANCING COSTS (INCOME)

In 2020, the Company's net financing costs were $2.0 million compared to $2.5 million in 2019. The decrease is due to the reduction in the average interest rate and lower long-term debt balance during 2020. In June and December 2020, Pulse amended and restated its senior credit facility to have more flexibility for future quarters during the pandemic. The credit facility is a $25.0 million revolving facility, of which $7.0 million was undrawn at the end of 2020. Changes are disclosed in "Liquidity, Capital Resources and Capital Requirements".

Pulse also has a subordinated debt agreement with EdgePoint Investment Group Inc., a non-arm's-length party, for $10.0 million. The agreement has no requirement to repay the principal prior to the end of term, December 31, 2023.

In 2020, the interest expense and standby fees related to the senior debt were $894,000 and the interest expense related to the subordinated debt was $1.0 million. Also included in the financing expenses is the interest related to lease liabilities as per IFRS 16, Leases, which was implemented in the first quarter of 2019. Interest income of $212,000 related to data library sales that provided extended payment terms was also recognized during the year.

INCOME TAXES

The income tax expense in 2020 was $171,000, even though the Company incurred a loss before income tax of $6.6 million. The main factor affecting the tax rate calculation is the permanent difference between the tax basis and the accounting value of the seismic data library acquired in 2019. In 2019, the Company recorded an income tax expense of $1.2 million. A reconciliation of the income tax expense or reduction is included in note 10 of the consolidated financial statements.

On October 20, 2020, the Government of Alberta enacted the reduction of the 2020 corporate income tax rate from 10 percent to 8 percent retroactive to July 1, 2020. The average combined income tax rate for 2020 was 24 percent compared 26.5 percent in 2019.

The effective tax rate for accounting in 2020 was different from the enacted income tax rate as a result of the permanent difference between the tax basis of the data library acquired in 2019 and its cost. The change in valuation allowance related to future resource deductions and non-deductible expenditures also contributed slightly to the variance between the effective and the enacted income tax rate.

SUMMARY FOR THREE MONTHS ENDED DECEMBER 31, 2020

EARNINGS (LOSS) BEFORE INCOME TAXES

For the three months ended December 31, 2020, the Company generated earnings before income taxes of $1.0 million ($0.02 per share basic and diluted) compared to a loss before income taxes of $432,000 ($0.01 per share basic and diluted) for the comparable period of 2019.

REVENUE

Total revenue for the three months ended December 31, 2020 was $5.2 million compared to $5.4 million for the three months ended December 31, 2019.

AMORTIZATION OF SEISMIC DATA LIBRARY

For the three months ended December 31, 2020, seismic data library amortization expense was $2.5 million compared to $3.5 million in the comparable period of 2019. The significant decrease is due to certain data acquired in previous years becoming fully amortized.

Amortization of the seismic data library is described further under "Critical Accounting Estimates".

SALARIES, COMMISSIONS AND BENEFITS

SCB for the three months ended December 31, 2020 was $669,000 compared to $868,000 in the comparable period of 2019. The decrease from 2019 is explained by salary reductions ranging from 7.5 percent to 20 percent for the Company's employees implemented in the second quarter of 2020. As stated above, the Company also received $94,000 in CEWS, which was recorded as a reduction of SCB.

OTHER SELLING, GENERAL AND ADMINISTRATIVE COSTS

SG&A for the three months ended December 31, 2020 was $346,000 compared to $592,000 for the three months ended December 31, 2019. As explained above the majority of the decrease was related to a $180,000 bad debt expense recorded in the three month period ended December 31, 2019 and reversed in the third quarter of 2020 after the full amount owing was collected, but most SG&A expenses were reduced. The Company also benefited from the CERS in the fourth quarter of 2020, which was recorded as a reduction of SG&A.

NET FINANCING COSTS (INCOME)

For the three months ended December 31, 2020, net financing costs were $567,000 compared to $526,000 for the same period in 2019. The difference is related to higher applicable margins for the interest rate and standby fee rate based on the total debt to adjusted EBITDA ratio in 2020.

INCOME TAXES

The income tax expense for the three months ended December 31, 2020 was $723,000 compared to an income tax expense of $327,000 for the fourth quarter of 2019. The main factor affecting the tax expense is the permanent difference between the tax basis and the accounting value of the data library acquired in January 2019.

REVIEW OF FINANCIAL POSITION

AS AT DECEMBER 31, 2020

TRADE AND OTHER RECEIVABLES

Trade and other receivables at December 31, 2020 totalled $7.5 million compared to $3.9 million at December 31, 2019. Receivables of $3.1 million classified as long-term at December 31, 2019 are now included in the trade and other receivables at December 31, 2020.

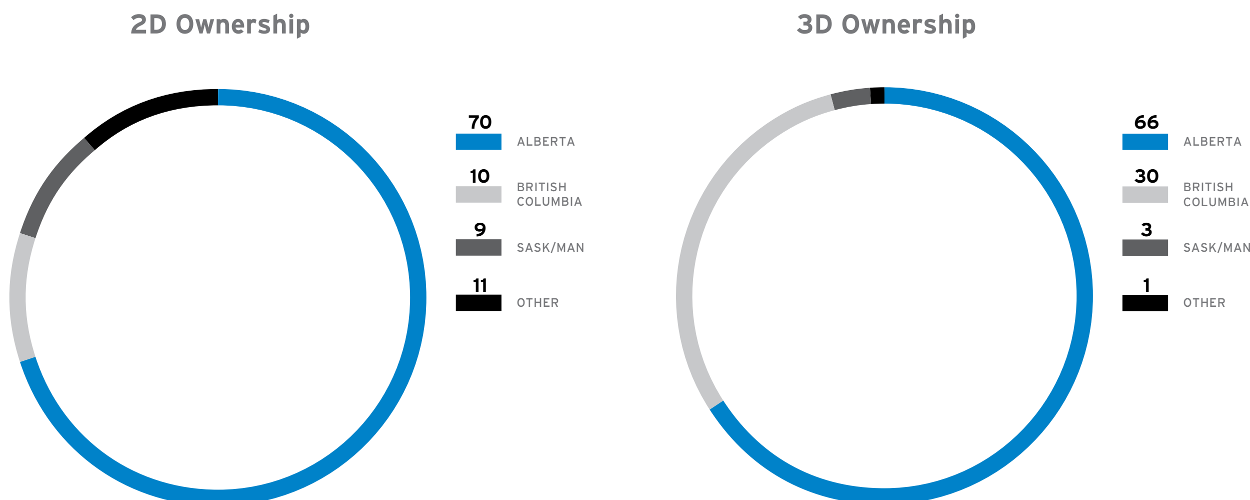
SEISMIC DATA LIBRARY

The Company's business model includes the objective of seismic data library growth. Pulse acquires seismic data to add to its library through two main methods. The Company purchases proprietary rights to complementary seismic datasets when it finds appropriate opportunities, and it also has conducted participation surveys. Pulse partners with customers on participation surveys from which the seismic data collected is added to Pulse's data library to generate future licensing revenue. Pulse retains full ownership of the data, and participating customers are provided with a licensed copy in return for their contribution to the capital costs of the survey. Pulse has not conducted a participation survey since the first quarter of 2015, but has grown significantly during this time through acquisition.

On January 15, 2019 the Company, through its acquisition of Seitel, added approximately 36,354 net square kilometres of 3D data and 379,207 net kilometres of 2D data to its library. The total value allocated to the seismic data in the purchase price was $61.0 million.

At December 31, 2020, the Company considered indicators of impairment for each of its CGUs and, based on that review, no impairment test was performed. The Company performed an impairment test on its Seitel CGU at March 31, 2020.

The breakdown of Pulse's 2D and 3D seismic data by geographical location is as shown in the following graphs.



LONG-TERM RECEIVABLES

In November 2019 the Company closed a $3.4 million seismic data sale. The sale included extended payment terms and, therefore, the payments due more than one year later were discounted, resulting in $191,000 of the data library sale to be recognized as interest income over time until the payments are received in 2021 and 2022. At December 31, 2020, the remaining interest income balance to be recognized was $82,000.

The $1.2 million in payments due from January 1, 2021 to September 30, 2021 are now included in the trade and other receivables. The remaining balance of $1.2 million in payments due from January 1, 2022 to October 1, 2022 is presented as a long-term receivable in the statement of financial position.

RIGHT-OF-USE (ROU) ASSETS

Included in the ROU assets are the present values of the basic rent related to Pulse's office lease agreement and the former Seitel warehouse lease agreement. The present values were calculated using an incremental borrowing rate of 6.7 percent. The operating costs associated with the lease agreements were not included as those costs are not fixed or based on an index or rate.

The office lease agreement terminates in March 2023 and the warehouse lease agreement terminates in April 2022.

No fair value was allocated to the ROU asset related to the former Seitel office space. This office was not required for business by Pulse. The office lease agreement terminates in November 2022. In the third quarter of 2019 a sub-lease for the remainder of the term of the acquired office space was finalized, which has led to a recovery of a portion of the monthly lease operating costs.

LONG-TERM DEBT

As described in "Acquisition of Seitel Canada Ltd." above, Pulse partially funded the acquisition of Seitel with a combination of debt from its syndicated credit facility and subordinated debt of $10.0 million.

In December 2020, the Company amended and restated its senior credit facility. The long-term debt now consists of a $25.0 million revolving facility which there is no current portion. The current portion of long-term debt previously consisted of quarterly mandatory principal repayment of $375,000 for a total of $1.5 million per year related to a term debt.

The long-term debt is offset by deferred financing charges to be amortized over two years.

LEASE LIABILITIES

Included in lease liabilities are the present values of the basic rent related to Pulse's office lease agreement, the lease agreement for Seitel's former office space and the warehouse lease agreement, all calculated using an incremental borrowing rate of 6.7 percent. The operating costs included in the lease agreements were not included in the lease liabilities as these costs are not fixed or based on an index or rate.

OTHER LONG-TERM PAYABLE

Included in the other long-term payable is the long-term portion of the cash-settled liability related to the long-term incentive plan.

SHARE CAPITAL SUMMARY

The Company's authorized share capital consists of an unlimited number of common shares and an unlimited number of preferred shares, issuable in series.

The following table provides details of the Company's outstanding share capital:

	Three months ended December 31,		Years ended December 31,	
	2020	2019	**2020**	2019
Weighted average shares outstanding: Basic and diluted	**53,793,317**	53,793,317	**53,793,317**	53,793,317
Shares outstanding at period-end			**53,793,317**	53,793,317
Shares outstanding at February 17, 2021			**53,793,317**	

DILUTED EARNINGS PER SHARE RECONCILIATION

The Company does not have any dilutive securities.

LONG-TERM INCENTIVE PLAN (LTIP)

The Company has an LTIP for employees, officers and directors designed to align the Company's long-term incentive compensation with its performance and to increase levels of stock ownership. Participants are granted restricted share units (RSUs) and performance share units (PSUs). LTIP awards are at the discretion of the Board of Directors.

RSUs and PSUs have accompanying dividend-equivalent rights and, therefore, additional RSUs and PSUs are issued to reflect dividends declared on the common shares. The plan's trustee will purchase common shares on the open market for the after-tax number of RSUs and PSUs vested with funds provided by the Company.

On March 31, 2020 186,658 RSUs and 237,113 PSUs were eligible to vest. Corporate financial performance in 2019 did not meet the predetermined performance benchmarks and, consequently, no PSUs vested on March 31, 2020. RSUs vest automatically based upon time and, consequently, all the eligible RSUs vested on March 31, 2020.

To satisfy its obligation, in April 2020 the Company provided $106,000 to the plan's trustee to purchase common shares on the open market for the total after-tax number of cash- and equity-settled RSUs that vested on March 31, 2020. The related withholding taxes of $102,000 were paid in June 2020 to settle fully the accrued cash-settled portion of the share-based payment liabilities.

At December 31, 2020 there were 692,140 RSUs and 876,973 PSUs outstanding.

At February 17, 2021, total RSUs and PSUs outstanding remain unchanged. On March 31, 2021, a portion of the LTIP awards, RSUs and PSUs, are eligible to vest. The Company's performance in 2020 did not meet the predetermined performance criteria and, consequently, no PSUs will vest on March 31, 2021. RSUs vest automatically based upon time; all of the eligible RSUs of 161,805 units will, therefore, vest automatically on March 31, 2021.

In April 2021, the Company will settle its obligation to deliver the common shares by providing funds to the independent LTIP trustee to purchase the shares on the open market.

DEFICIT

On December 31, 2020 the Company had a deficit of $51.8 million, compared to $45.0 million at December 31, 2019. Included in the deficit is the net loss for the year of $6.8 million.

DEFERRED TAX LIABILITY

The net deferred income tax liability was $962,000 at December 31, 2020 compared to $1.1 million at December 31, 2019. The decrease in the deferred income tax liability is mainly due to the decrease in the difference between the tax base of the seismic data library and the carrying amount on the statement of financial position.

The deferred income tax liability consists mainly of taxable temporary differences between the tax base of the seismic data library and the carrying amount on the statement of financial position.

FINANCIAL SUMMARY OF QUARTERLY RESULTS

	2020				2019			
(thousands of dollars, except per share data)	**Q4**	**Q3**	**Q2**	**Q1**	Q4	Q3	Q2	Q1
Data library sales	**5,142**	**1,829**	**1,850**	**2,190**	5,281	2,460	10,617	5,277
Other revenue	**81**	**76**	**91**	**90**	83	127	167	143
Total revenue	**5,223**	**1,905**	**1,941**	**2,280**	5,364	2,587	10,784	5,420
Amortization of seismic data library	**2,493**	**2,489**	**2,850**	**3,516**	3,500	3,557	3,577	3,566
Net earnings (loss)	**287**	**(1,937)**	**(2,309)**	**(2,827)**	(759)	(2,861)	2,880	(2,671)
Per share – basic and diluted	**0.01**	**(0.04)**	**(0.04)**	**(0.05)**	(0.01)	(0.05)	0.05	(0.05)

The revenue streams generated by Pulse's operations are data library sales and other revenue. Other revenue includes revenue from client services consisting of copy and reproduction charges, as well as data storage fees related to the leased warehouse that was acquired with the Seitel purchase.

Data library sales consist of traditional sales and transaction-based sales, as described below under "Traditional Sales vs. Transaction-Based Sales: Ten-Year History". See also "Seismic Revenue Fluctuations".

During 2020 and 2019, transaction-based sales contributed to data library sales to varying degrees. The second quarter of 2019 included $4.0 million in transaction-based sales. The third quarter of 2020 included $1.8 million in transaction-based sales. The fourth quarter of 2020 included $4.6 million in transaction-based sales.

Very little transaction-based sales revenue was generated in the other quarters depicted in the table above.

The significant increase in amortization expense in the first quarter of 2019 over the preceding three quarters is due to the Seitel acquisition in January 2019. Amortization expense decreased in the second quarter of 2020 from the prior quarters depicted above due to a large seismic data library asset acquired in 2010 becoming completely amortized. As amortization is a non-cash expense, the Company continued to generate cash EBITDA and shareholder free cash flow in each quarter.

During the past eight quarters, the fluctuations in net earnings or loss have largely been a function of the corresponding quarterly fluctuations in revenue. For each quarter in 2019, the increased amortization expense, restructuring expenses and financing costs related to the acquisition offset the increased revenue, and contributed to the lower net result.

SELECTED ANNUAL FINANCIAL INFORMATION

(thousands of dollars, except per share data)	Years ended December 31,		
	2020	2019	2018
Data library sales	**11,011**	23,635	10,076
Other revenue	**338**	520	112
Total revenue	**11,349**	24,155	10,188
Net loss	**(6,786)**	(3,411)	(1,730)
Per share – basic and diluted	**(0.13)**	(0.06)	(0.03)
Total assets	**56,742**	69,504	38,847
Long-term debt	**27,715**	31,511	–
Total non-current financial liabilities	**29,302**	32,484	1,766

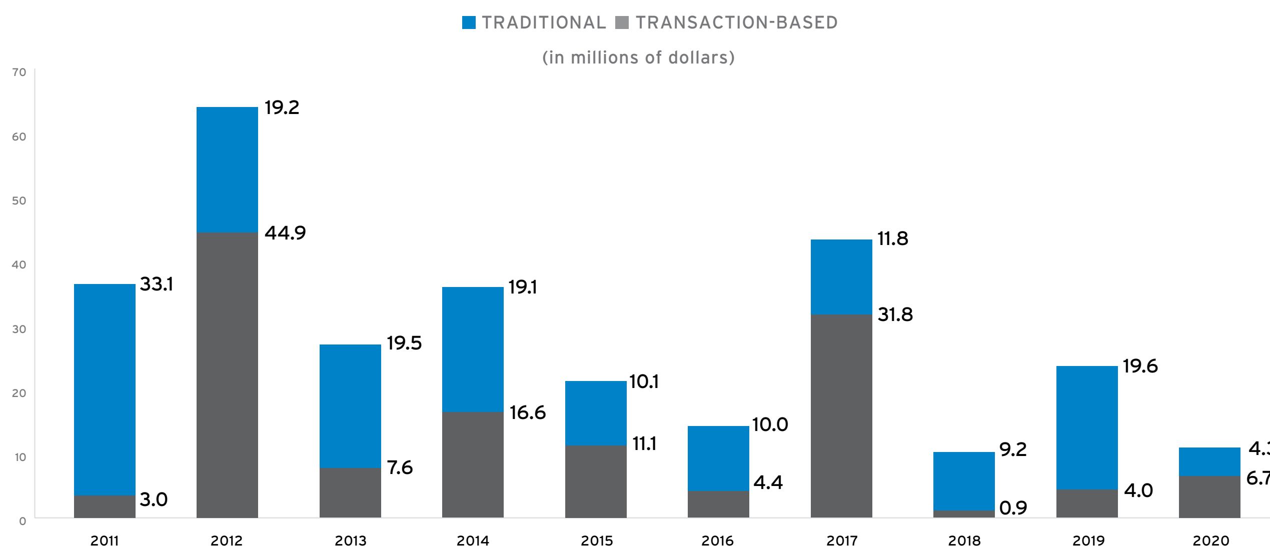
For the last three years, total revenue consisted of seismic data library sales and other revenue. Seismic data library sales in 2020 were lower than in 2019 due to the 2020 pandemic and drastic cutbacks in the energy-producing sector's capital spending. Overall in the three-year period, sales were lower than historical sales as the ongoing industry downturn reduced customer demand. With the approximate doubling of the seismic data library in 2019, sales more than doubled over the 2018 level, but the crippling of the industry in 2020 was unprecedented.

The Company had net losses in 2020 and 2019, due primarily to low data library sales and high amortization expense. In 2018, prior to the large acquisition, amortization expense was lower than in the following years but, as stated, in 2018 sales were low and didn't include any significant transaction-based revenue.

See also "Seismic Revenue Fluctuations".

Total assets increased from 2018 to 2019 because of the acquisition of Seitel in January 2019. Total assets decreased from 2019 to 2020 due to amortization of the seismic data library.

TRADITIONAL SALES VS. TRANSACTION-BASED SALES: TEN-YEAR HISTORY



There are three main types of transaction-based sale. The first is the partnership or joint venture, in which an oil and gas asset holder elects to pool its expertise, capital and/or assets with one or more new participants to explore or develop

a play. Under the Company's current standard-form licensing agreements, any new technical or operational participant that wishes to view or interpret the seismic data must purchase a data licence from Pulse, generally at a discount (usually pre-defined in the initial licensing agreement). Purely financial partners that do not wish to view or interpret the seismic information are exempt.

The second kind of transaction-based sale is a corporate merger or acquisition. In this case, the seismic data is transferred to the new organization. Under the Company's current standard-form licensing agreements, the buyer has 30 days to determine whether it would like to pay a change-of-control fee to keep the data or return the data to Pulse.

The third is the sale of an oil and gas asset or group of assets (as well as partial mineral rights to particular zones below the asset-owner's lands). Under the Company's current standard-form licensing agreements, the licence is not transferable upon an asset sale. In this case, no rights to the seismic data transfer to the buyer, and there are no terms of payment in the licence agreement. Should the buyer be interested in Pulse's seismic data, it must license the data from Pulse at the regular price. Following this type of transaction, considerable time may pass until a data licensing sale occurs because the new asset owner may defer development of the particular asset. In addition, the new asset owner may be interested in only portions of the original dataset. The attraction of Pulse's library remains the far lower cost of licensing the data than shooting new seismic over the same area.

The precise terms of individual licence agreements (including those historically used by Pulse and its predecessors and those assumed by Pulse on data acquisitions) can vary greatly. Change-of-control fees and joint venture copy fees may not always be payable, and licence agreements may not always be non-assignable.

CONTRACTUAL OBLIGATIONS

Pulse's known contractual obligations at December 31, 2020 are comprised of leases for certain office spaces and warehouse space, minimum payments under seismic data services contracts and accounts payable and accrued liabilities. The following table reflects the Company's anticipated payment of contractual obligations:

Contractual Obligations (thousands of dollars)	Total	Payments due by period: Less than 1 year	1 - 3 years	4 - 5 years	After 5 years
Long-term debt – capital	27,978	–	27,978	–	–
Long-term debt – interest	4,909	1,935	2,974	–	–
Lease liabilities	2,302	1,285	1,017	–	–
Seismic data services contracts	494	494	–	–	–
Accounts payable and accrued liabilities	1,076	994	82	–	–
Total contractual obligations	36,759	4,708	32,051	–	–

Obligations in the category of seismic data services contracts include geophysical services such as digitization and data storage.

Accounts payable and accrued liabilities at December 31, 2020 include the interest and standby fee accrual of $293,000 related to the long-term debt and the accrual of $61,000 related to the long-term incentive plan.

LIQUIDITY, CAPITAL RESOURCES AND CAPITAL REQUIREMENTS

At December 31, 2020 Pulse had working capital of $5.6 million and a working capital ratio of 3.6:1.

In 2020 the Company generated $3.8 million of cash from operating activities compared to $8.6 million for the same period in 2019. The main differences between the two periods relate to lower net financing costs and lower income tax paid, partially offset by lower sales.

The Company also utilized cash for the following outlays:

- Long-term debt repayments of $3.8 million;
- Settlement of equity share-based payment of $106,000;
- Debt transaction costs of $174,000;
- Capital lease principal repayments of $703,000; and
- Seismic data digitization of $383,000.

The Company will not carry cash while there is a balance on the revolving credit facility, as all cash is applied to the amount outstanding.

On January 15, 2019 the Company acquired 100 percent of the shares of Seitel. The purchase consideration included an initial cash payment of $53.6 million on closing, plus potential additional payments of up to $5.0 million, in aggregate, within two years of closing. The amount of the additional payments was determined as 50 percent of sales revenue generated from the former Seitel database prior to December 31, 2020. Pulse paid 100 percent of the maximum $5.0 million deferred payment in 2019. In connection with the acquisition of Seitel, the Company amended and restated its syndicated credit agreement. The facility was comprised of $15.0 million in term debt, all of which was utilized for the acquisition, and a $30.0 million revolving facility, $8.0 million of which was drawn for the acquisition.

On June 5, 2020, the Company amended its syndicated credit facility for a four-quarter modification period beginning on July 1, 2020. The syndicated credit facility was then comprised of $12.8 million in term debt and a $15.0 million revolving facility (previously $30.0 million) with $5.9 million drawn. Up to $5.0 million of the revolving facility remained available as an operating line of credit.

On December 18, 2020, the Company amended and restated its credit agreement. The simplified restated credit facility is non-syndicated and consists of a $25.0 million revolving credit facility. At the amendment date the balances owing were $5.9 million on the revolving facility and $12.4 million on the term facility. The balance of the term facility has been repaid with proceeds from the revolving facility and cancelled. The balance drawn on the revolving credit facility as of December 31, 2020 was $18.0 million, leaving $7.0 million available. As part of the new arrangement, the agreement was extended an additional year, from January 15, 2022 to January 15, 2023.

Significant terms of the current credit facility are:

- Interest is based on prime rate plus 0.75 percent to 4.25 percent following a ten-tier margin structure based on the Company's total debt to adjusted EBITDA ratio as described below;
- Standby fee based on the daily undrawn balance of the revolving portion of the credit facility and the Company's total debt to adjusted EBITDA ratio following the amended ten-tier margin structure;
- Two-year term until January 15, 2023 on the syndicated credit facility, with an extension of up to one year available on January 15 of every year with the approval of the lenders. If the extension is not granted, any outstanding amounts will be payable on the then-current applicable maturity date; and
- Security through a charge on all of the assets of the Company and its material subsidiaries.

At December 31, 2020 the Company had an $18.0 million balance on the revolving credit facility and the applicable interest rate was 5.2 percent (December 31, 2019 – 4.7 percent).

The credit facility also includes the following two financial covenants:

1) SENIOR DEBT TO ADJUSTED EBITDA RATIO

Senior debt is total debt less subordinated debt and is determined on a consolidated basis and in accordance with IFRS.

Adjusted EBITDA is to be calculated on a trailing 12-month basis and is defined as earnings or loss before interest, income taxes, depreciation and amortization, plus extraordinary losses, non-cash losses and expense charges, and any

other unusual or non-recurring cash charges, expenses or losses consented to by the lenders, less participation survey revenue, lease payments treated as capital lease, warehouse storage fees, extraordinary gains and non-cash gains and income. Adjusted EBITDA is to be adjusted for acquisitions or dispositions to reflect such acquisition or disposition as if it occurred on the first day of such calculation period.

The senior debt to adjusted EBITDA ratio for the fourth quarter of 2020 shall not be greater than 5.5:1, not greater than 5.0:1 on March 31, 2021, not greater than 4.25:1 on June 30, 2021 and not greater than 3.0:1 for the fiscal quarters ending September 30, 2021 and thereafter.

At December 31, 2020 the senior debt to adjusted EBITDA ratio was 2.4:1.

2) INTEREST COVERAGE RATIO

The interest coverage ratio is defined as the ratio of adjusted EBITDA to interest expense.

The interest coverage ratio shall not be less than 1.5:1 from December 31, 2020 to June 30, 2021, 2.25:1 at September 30, 2021 and December 31, 2021, 2.50:1 at March 31, 2022 and June 30, 2022 and 3.0:1 for fiscal quarters ending September 30, 2022 and thereafter.

At December 31, 2020 the interest coverage ratio was 3.6:1.

The senior debt to adjusted EBITDA ratio and the interest coverage ratio related to the financial covenant at December 31, 2020 was calculated as follows:

SENIOR DEBT TO ADJUSTED EBITDA RATIO

(thousands of dollars except ratio)	
Senior debt	17,978
Divided by:	
Adjusted EBITDA	7,468
Senior debt to adjusted EBITDA ratio	2.41

INTEREST COVERAGE RATIO (ICR)

(thousands of dollars except ratio)	
Adjusted EBITDA	7,468
Divided by:	
Interest expense	2,088
ICR	3.58

The Company was therefore in compliance with the credit facility's covenants at December 31, 2020.

The Company pays interest and a standby fee based on the daily undrawn balance of the credit facility and its total debt to adjusted EBITDA ratio. Interest and standby fees on the revolving bank loan are calculated based on the lender's prime rate, bankers' acceptance rate or LIBOR, plus an applicable margin based on the covenant ratio of total debt to adjusted earnings before interest, income taxes, depreciation and amortization (adjusted EBITDA). The total debt (before deferred financing charges} to adjusted EBITDA ratio at December 31, 2020 was 3.75:1 and the applicable margin and standby fee will be set at the seventh-level rates specified in the facility.

The interest and standby fee rates are adjusted the day after the covenant's calculation for the previous fiscal quarter is received and approved by the lender.

The applicable margin and standby fee rate were determined as follows:

Total Debt to Adjusted EBITDA Ratio	Applicable Margin for Canadian Prime Rate Loans	Applicable Margin for Bankers' Acceptances	Standby Fee Rate
Less than or equal to 1:1	0.75%	2.25%	0.45000%
Greater than 1:1 but less than or equal to 1.5:1	1.00%	2.50%	0.50000%
Greater than 1.5:1 but less than or equal to 2:1	1.25%	2.75%	0.55000%
Greater than 2:1 but less than or equal to 2.5:1	1.50%	3.00%	0.67500%
Greater than 2.5:1 but less than or equal to 3:1	1.75%	3.25%	0.73125%
Greater than 3:1 but less than or equal to 3.5:1	2.25%	3.75%	0.93750%
Greater than 3.5:1 but less than or equal to 4:1	2.75%	4.25%	1.06250%
Greater than 3.5:1 but less than or equal to 4:5:1	3.25%	4.75%	1.18750%
Greater than 3.5:1 but less than or equal to 5:1	3.75%	5.25%	1.31250%
Greater than 5:1	4.25%	5.75%	1.43750%

Funding for Pulse's future capital expenditures will generally depend on the level of future data library sales. Pulse's management believes that the Company's capital resources will be sufficient to finance future operations and carry out the necessary capital expenditures through 2021. The Company anticipates that future capital expenditures will be financed through the available credit facility and funds from operations. The Company has a $25.0 million revolving credit facility with $7.0 million undrawn. If deemed appropriate by management and the Board of Directors, Pulse can also issue common or preferred shares.

Pulse requires flexibility in managing its capital structure to take advantage of opportunities in raising additional capital where opportunities for seismic data acquisitions arise. Historically, the Company has used a combination of debt and equity to finance growth initiatives, and it continues to rely on internal measures such as the long-term debt to equity ratio to structure and forecast its capital requirements. Long-term debt is defined as long-term debt net of deferred financing costs. At December 31, 2020, the long-term debt to equity ratio was 1.1:1. Pulse's management considers the current capital structure appropriate.

This discussion on liquidity, capital resources and capital requirements contains forward-looking information; users of this information are cautioned that actual results may vary and are encouraged to review the discussions of risk factors and forward-looking statements below.

NON-CAPITAL RESOURCES

The Company's main non-capital resource is its key management and staff. The Company has an experienced team with extensive knowledge about the seismic industry. Pulse's management understands industry cycles and how to manage the business in the downturn and recovery phases. Pulse has built strong sales, financial and IT departments. Key management and staff are eligible to participate in the short-term and long-term incentive plans, which are tied to the Company's shareholder free cash flow per share.

NON-GAAP FINANCIAL MEASURES AND RECONCILIATIONS

This MD&A and the Company's continuous disclosure documents provide discussion and analysis of cash EBITDA and shareholder free cash flow. IFRS do not include standard definitions for these measures and, therefore, they may not be comparable to similar measures used and disclosed by other companies. As IFRS have been incorporated into Canadian generally accepted accounting principles (GAAP), these non-IFRS measures are also non-GAAP measures. The Company has included these non-GAAP financial measures because management, investors, analysts and others use them to evaluate the Company's financial performance.

Cash EBITDA and shareholder free cash flow are not calculations based on IFRS and should not be considered in isolation or as a substitute for IFRS performance measures, nor should they be used as an exclusive measure of cash flow, because they do not consider working capital changes, capital expenditures, long-term debt repayments and other sources and uses of cash which are disclosed in the consolidated audited and interim statements of cash flows.

CASH EBITDA AND SHAREHOLDER FREE CASH FLOW

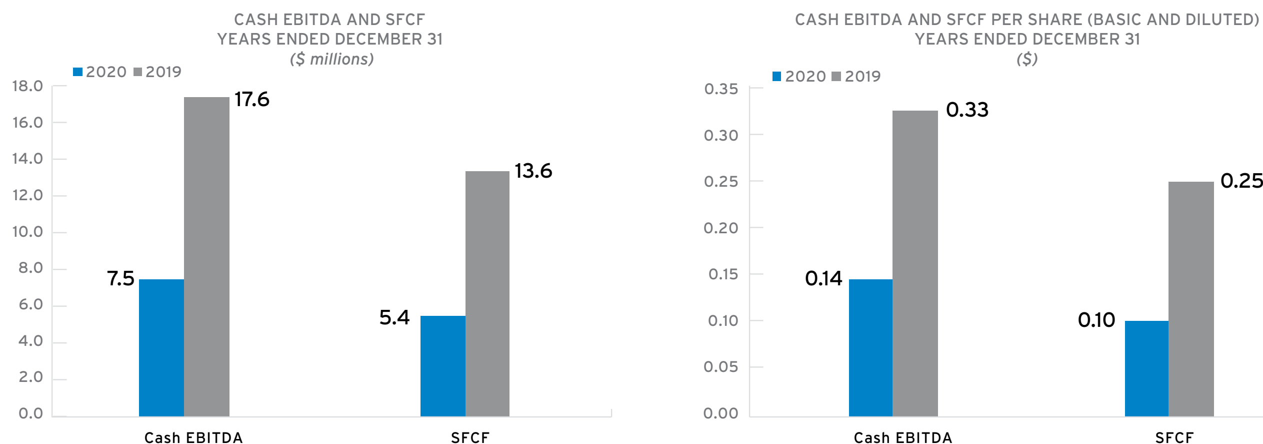
Cash EBITDA represents the capital available to invest in growing the Company's 2D and 3D seismic data library, to pay interest and principal on its long-term debt, to purchase its common shares, to pay taxes and to pay dividends.

Cash EBITDA is calculated as earnings or loss from operations before interest, taxes, depreciation and amortization less participation survey revenue, plus non-cash and non-recurring expenses. Cash EBITDA excludes participation survey revenue as this revenue is directly used to fund specific participation surveys and is unavailable for discretionary expenditures. The Company believes cash EBITDA helps investors compare Pulse's results on a consistent basis without regard to participation survey revenue and non-cash items, such as depreciation and amortization, which can vary significantly depending on accounting methods or non-operating factors such as historical cost.

Shareholder free cash flow further refines the calculation of capital available to invest in growing the Company's 2D and 3D seismic data library, to repay debt, to purchase its common shares and to pay dividends, by deducting non-discretionary expenditures from cash EBITDA. Non-discretionary expenditures are defined as debt financing costs (net of deferred financing expenses amortized in the current period) and current tax provisions.

A reconciliation of net earnings or loss to EBITDA, cash EBITDA and shareholder free cash flow follows:

	Three months ended December 31,		Years ended December 31,	
(thousands of dollars, except per share data)	**2020**	2019	**2020**	2019
Net earnings (loss)	**287**	(759)	**(6,786)**	(3,411)
Add:				
Amortization of seismic data library	**2,493**	3,500	**11,348**	14,200
Net financing costs	**567**	526	**1,986**	2,452
Income tax expense	**723**	327	**171**	1,226
Depreciation	**166**	165	**667**	645
EBITDA	**4,236**	3,759	**7,386**	15,112
Deduct:				
Lease payments treated as capital lease	**22**	21	**85**	85
Warehouse storage fees	**75**	75	**300**	425
Add:				
Non-cash expenses	**67**	71	**264**	292
Restructuring costs	**(28)**	145	**203**	2,663
Cash EBITDA	**4,178**	3,879	**7,468**	17,557
Deduct:				
Net financing costs	**567**	526	**1,986**	2,452
Current income tax expense	**711**	440	**395**	1,775
Add:				
Non-cash deferred financing charges	**55**	33	**174**	124
Interest paid (capital lease)	**23**	35	**112**	151
Shareholder free cash flow (SFCF)	**2,978**	2,981	**5,373**	13,605
Cash EBITDA per share basic and diluted	**0.08**	0.07	**0.14**	0.33
SFCF per share basic and diluted	**0.06**	0.06	**0.10**	0.25



As reported in previous filings concerning the Seitel acquisition, in addition to the purchase price of $58.6 million, Pulse assumed various future liabilities viewed by the Company as being part of the total cost of the acquisition. These estimated $4.2 million of costs are being expensed over time and categorized as restructuring costs, with a large percentage occurring in the first year, including $2.7 million in 2019. Because these expenses are expected to be non-recurring, they are being excluded from the Company's calculation of cash EBITDA and shareholder free cash flow. Also deducted from the cash EBITDA calculation is the rental revenue received for the use of a portion of the warehouse by a third party.

FINANCIAL INSTRUMENTS

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Financial instruments are recognized on the statement of financial position when the Company becomes a party to the instrument's contractual obligations. The Company's financial assets include cash and cash equivalents, trade and other receivables. Its financial liabilities mainly comprise accounts payable and long-term debt.

FAIR VALUE

The fair values of cash and cash equivalents, accounts receivable and accounts payable approximate their carrying amount largely due to the short-term maturities of these instruments. The fair value of the long-term debt approximates the carrying value because interest charges under the bank loan are based on current Canadian bankers' acceptance rates and margins.

CREDIT RISK

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's accounts receivable.

The Company is exposed to customer credit risk in connection with data sales and participation surveys with its customers. The Company's exposure to credit risk is influenced mainly by the individual characteristics of each customer. The nature of the Company's customer base, including the default risk of the industry in which customers operate, has an influence on credit risk. As the Company operates to a large extent in the oil and natural gas industry, nearly all of its trade receivables relate to customers from this industry.

The effective monitoring and control of credit risk is a core competency of the Company. Each new customer is analyzed individually for creditworthiness before payment and delivery terms and conditions are offered. The Company's review includes credit reference checks and credit limits for all customers as well as other monitoring activities. Accounts receivable aging is reviewed regularly.

Certain customers have signed agreements with the Company that provide for extended payment terms. The Company's credit risk increases on these types of arrangements due to the length of time before payments are received. The risk is mitigated by attempting to limit these types of arrangements to major oil and natural gas companies which have long operating histories and adequate resources to fulfill their commitments.

The Company has been doing business with the majority of its customers for many years, with insignificant credit losses to date. The Company does not require collateral in respect of trade receivables.

The Company's customers are in the oil and natural gas industry, with the majority located in Alberta. At December 31, 2020, 95 percent or $8.3 million of total accounts receivable were due from four customers. Of this amount, $6.3 million was collected subsequent to year-end. The Company does not expect any problem in collecting the remaining amounts.

Accounts receivable over 90 days are monitored and assessed for impairment. Those accounts are evaluated on a case-by-case basis using information received from the customer and market information. The Company has one other account due for more than 90 days but believes that this account is collectible.

Cash and cash equivalents are held with a Canadian chartered bank that is one of Canada's five largest banks. The carrying amount of financial assets represents the maximum credit exposure. The Company considers the risk on cash and cash equivalents to be very low.

LIQUIDITY RISK

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled in cash or other financial assets, i.e., repaying its debt and paying its suppliers. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to its reputation. Beyond total working capital of $5.6 million, the Company had a revolving-term credit facility, which offers flexibility in drawing and paying down debt, without penalty, of which $7.0 million remained available at December 31, 2020 for future draws, as described in "Liquidity, Capital Resources and Capital Requirements".

The Company regularly monitors cash flow. In addition, it monitors funding options available in the capital markets, as well as trends in the availability and costs of such funding, with a view to maintaining financial flexibility and limiting repayment risks. The Company does not believe that it will encounter difficulty in meeting its obligations associated with financial liabilities.

COMMODITY PRICE RISK

The Company is not directly exposed to commodity price risk as it does not have any contracts directly based on commodity prices. A change in commodity prices, specifically oil and natural gas prices, could have a material impact on the Company's customers' cash flows and could therefore affect seismic data library sales and participation surveys. Commodity prices are affected by many factors, including supply and demand. The Company has not entered into any commodity price risk contracts. Given that this is an indirect influence, the financial impact on the Company of changing oil and natural gas prices is not reasonably determinable.

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in conformity with IFRS requires management to make estimates and assumptions. Management's estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. The Company's critical accounting estimates are discussed annually with the Audit and Risk Committee of the Company's Board of Directors and are described below.

SEISMIC DATA LIBRARY

Amortization of the seismic data library, the Company's largest asset, with a net book value of $46.9 million at December 31, 2020 (December 31, 2019 – $57.9 million), is conducted by reference to the estimated timing of the economic return of the seismic library. Amortization of the seismic data library is based on management's estimates of expected future sales, expected useful lives, market developments and experience. These estimates may change due to changes in market conditions, potential prospects, exploration licence periods, exploration and development in certain areas, government regulations and general economic conditions. Because of the inherent difficulty in estimating market developments and future sales, the amortization rates might not accurately reflect the systematic allocation of the seismic data library over its useful life.

Additions to the seismic library arise in two ways: (i) participation surveys, and (ii) the purchase of existing seismic data. Costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized to the seismic data library. Subsequent expenditures on data library assets, such as reprocessing and digitization, are capitalized only when the expenditure increases the asset's future economic benefits. All other expenditures are recognized in earnings as incurred.

The costs of purchased data are amortized on a straight-line basis over seven years.

The carrying amounts of the seismic data library are reviewed at each reporting date by management to determine whether there is any indication of impairment. If so, the asset's recoverable amount is estimated and impairment recorded, if any. The determination of the Company's CGUs was based on management's judgements in regards to the smallest identifiable group of seismic data that generates cash inflows largely independent of the cash inflows from other data. Estimating future cash flows and residual values for purposes of impairment testing requires management to make judgments regarding long-term forecasts of future revenues and costs and future residual values related to the seismic data library. These forecasts are uncertain as they require assumptions about future market conditions and demand for seismic data. Significant and unanticipated changes in these assumptions could require a provision for impairment in a future period.

As discussed above, the Company did not recognize an impairment loss in 2020 or 2019.

Estimates of useful lives and the pattern of expected future economic benefits are based on historical experience and internal business plans. Expected future economic benefits are determined based on historical revenue patterns. Future deviations from the Company's historical returns could materially affect the current amortization methodology.

PERFORMANCE SHARE UNITS

In determining the amount of share-based compensation related to PSUs, management makes estimates about future results and vesting criteria. It is reasonably possible that future outcomes could be different from the estimates and could require a material adjustment to the share-based compensation expense recorded in future periods. The impact of any change in the number of PSUs expected to vest is recognized in the period the estimate is revised.

DEFERRED TAX ASSETS

Significant management judgement is required to determine the amount of deferred tax assets that can be recognized, based on the likely timing and level of future taxable income. The estimates of projected future taxable income are based on a variety of factors and assumptions, many of which are subjective and beyond the Company's control. Accordingly, these estimates could differ significantly from year to year, and the Company might end up realizing more or less of the deferred tax assets than recognized in the consolidated financial statements.

DISCLOSURE CONTROLS AND PROCEDURES (DC&P) AND INTERNAL CONTROLS OVER FINANCIAL REPORTING (ICFR)

DC&P

Management has evaluated the effectiveness of its DC&P (as defined in National Instrument 52-109), under the supervision of its CEO and CFO, at December 31, 2020. Based on this evaluation, the CEO and CFO have concluded that the DC&P were effective at December 31, 2020.

ICFR

Management under the supervision of its CEO and CFO evaluated the effectiveness of ICFR (as defined in National Instrument 52-109) at December 31, 2020, in accordance with Internal Control 2013 Integrated Framework, issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the Control Objectives for Information and Related Technology Framework (COBIT). Based on this evaluation, Pulse's CEO and CFO concluded that the ICFR were effective at December 31, 2020.

No changes were made to ICFR during the period beginning on October 1, 2020 and ending on December 31, 2020 that have materially affected, or are reasonably likely to materially affect, Pulse's ICFR.

RISK FACTORS

OIL AND NATURAL GAS PRICES

Pulse's customers are oil and natural gas exploration and development companies. Oil and natural gas prices are volatile and directly affect the capital budgets, drilling activity, and access to capital and credit by Pulse's customers, which in turn directly affect the demand by such customers for seismic data.

DATA ACQUISITION, DEMAND FOR SEISMIC DATA AND PARTICIPATION SURVEYS

Pulse's ability to generate revenue, cash EBITDA, shareholder free cash flow and earnings and to grow its seismic data library depends on the acquisition of new data and the demand for seismic data from its oil and natural gas customers over geological plays and areas that such customers focus on in a given period. Activity in such plays and areas depends on commodity prices, customers' budgets, geological understanding, advances in drilling technology, government fiscal and regulatory regimes, and access to processing and pipeline capacity, all of which are beyond Pulse's control. The Company endeavours to grow its high-quality proprietary data library, to expand and maintain its customer base, and to provide good customer service with short delivery time and broad data coverage in prospective locations.

PRICING OF DATA LIBRARY LICENCE SALES

Pulse's ability to generate revenue, cash EBITDA, shareholder free cash flow and earnings and to grow its data library depends on its ability to market data library licences and on the pricing of these licences. Pulse prices its data competitively while endeavouring to maintain the integrity of the database.

CYBERSECURITY

Pulse maintains strong cybersecurity over its IT systems, networks and website with the goal of preventing cyber-attacks. Cyber-attacks are intentional attempts to gain unauthorized access to information systems, networks and websites for unlawful or improper purposes. Attempts to breach cybersecurity are becoming more sophisticated and could lead to unauthorized access and release of confidential information and disruption in operating systems.

Cyber attackers may use a range of techniques, from manipulating people to using sophisticated malicious software and hardware on a single or distributed basis. Some cyber-attacks use a combination of techniques in their attempts to evade safeguards. Pulse uses firewalls, intrusion prevention systems and antivirus software in the security program of its systems and networks. The risk and consequences of cyber-attacks can surpass traditional physical security risk due to the rapidly evolving scope and sophistication of these threats.

A successful attack on Pulse's systems, networks, website or infrastructure could prevent Pulse from providing reliable service and information, allow for the unauthorized interception, destruction, use or dissemination of Pulse's or its customers' information, and/or prevent Pulse from operating its networks. Such events could cause the Company to lose customers, lose revenue, incur expenses, and suffer reputational and goodwill damages. It could also lead to a loss or devaluation of Pulse's intellectual property rights and could subject the Company to litigation or government investigation. The costs of such events could include liability for information loss, and repairs to infrastructure and systems. Pulse's insurance may not cover or be adequate to fully reimburse the Company for these costs and losses.

To mitigate these risks, Pulse has implemented measures and processes that mitigate the risk of physical and cyber-attacks. Pulse has policies, controls and monitoring systems that protect its assets and employees. Pulse also uses cyber threat intelligence, testing, intrusion prevention/detection and incident response capabilities to help identify possible cyber threats and adjust its security measures accordingly.

Pulse also has a recovery plan in case of a cyber-attack. It includes backup infrastructure and systems that mirror the primary infrastructure and systems used in the day-to-day operations. The recovery plan has been tested.

Pulse also uses a third party to store its physical seismic data, the Company's revenue-generating asset, and a backup copy of the digital seismic data library. The third party backs-up the data using the same technology as Pulse, which includes redundant offsite storage in a secured data facility as well as tape backups.

As part of the risk management strategy, the Company's IT Director reports in person on a regular basis to the Audit and Risk Committee of the Board of Directors the key risk indicators, including any new risks that Pulse is facing in its day-to-day operations along with updates to the risk mitigation plans. The Audit and Risk Committee has the oversight responsibility for cyber security. The goal of the strategy is to be prepared, protected, and able to quickly detect and respond appropriately to the situation. The strategy to ensure post-breach reporting requirements are met in case of security breach.

Pulse has not experienced a security incident or breach. If a material security breach happens in the future, the management team's Disclosure Committee would enforce the communications plan to inform the relevant stakeholders including employees, directors, customers, securities commissions, stock exchanges, government agencies and shareholders as soon as possible.

RELICENSING (CHANGE-OF-CONTROL) FEES AND PARTNER COPY SALES

Data library licences are generally not transferable. Under Pulse's current standard-form licence agreement, upon a change of control of the licensee in a merger or acquisition transaction, a change-of-control fee is generally payable. Under Pulse's current standard-form licence agreement, a licensee generally may not give the licensed data to a joint interest partner in the oil and natural gas lands. If the joint interest partner wishes to view or interpret the seismic data, it must purchase an additional copy directly from Pulse.

The precise terms of individual licence agreements (including those historically used by Pulse and its predecessors and those assumed by Pulse on data acquisitions) can vary greatly. Relicensing (change-of-control) fees may not always be payable and joint interest partners may not always wish or have to purchase an additional licensed copy.

In addition, merger-and-acquisition and joint venture activity in the oil and natural gas industry is unpredictable.

LAWS AND REGULATIONS

Pulse's oil and natural gas customers are subject to federal and provincial laws and regulations, including those pertaining to taxation, royalty rates, environmental protection and safety. Compliance with these laws and regulations, and changes in these laws and regulations, may affect oil and natural gas exploration and development activities and the demand for seismic data licences and participation surveys by such customers.

COMPETITION

Pulse owns the largest seismic data library in Canada, consisting of high-quality data with extensive coverage in the WCSB. Other geophysical companies that own large data libraries are considered to be indirect competitors of Pulse, as there is generally little overlap between 3D databases. With each company owning unique seismic data, clients seeking specific data will usually choose to license available data from the appropriate library as the cost of overshooting an already-surveyed area is much higher than licensing existing data. Seismic data library companies and individual oil and natural gas companies may, however, elect to overshoot an existing 3D dataset if it is not of the desired quality or specifications.

KEY MANAGEMENT, OPERATIONS AND MARKETING PERSONNEL

Pulse depends on certain key management, operations and marketing personnel for the success of its seismic acquisition, marketing and licensing business. Pulse endeavors to obtain written employment agreements with such personnel containing confidentiality and non-competition provisions where appropriate. Personnel risk is further mitigated by providing compensation packages designed to support Pulse's business philosophy and which are both market-driven and performance-based. This includes short- and long-term incentive programs which are directly tied to shareholder free cash flow per share, which the Board of Directors believes is the key financial metric for the long-term increase in the value of Pulse. Pulse also has a succession plan to provide adequate training and education to its future leaders, which is reviewed annually by the Board of Directors.

LOSS OF SEISMIC DATA

Pulse's largest asset and source of revenue is the seismic data library. The safety and security of the data library asset is essential to the Company's success. The physical data is stored in two secure locations and managed by Pulse staff and a data storage company. The majority of the physical data has been digitized, with the exception of a portion of the 2D data acquired in 2019, and back-up digital copies are kept in separate secure locations. For further information, please also see "Cybersecurity" above.

PROTECTION OF INTELLECTUAL PROPERTY

Pulse relies on a combination of licence agreements, copyright, confidentiality and other intellectual property rights to protect its ownership rights and copyright in its seismic data. Despite Pulse's efforts to enforce its licence agreements and copyright, there is a risk that unauthorized parties might improperly obtain, copy or use Pulse's seismic data without Pulse's knowledge or permission. The cost of litigation necessary to enforce Pulse's ownership rights and copyright could be prohibitive.

NEW PRODUCTS

Seismic data is used by oil and natural gas exploration and development companies to identify portions of geological formations that have the potential to hold hydrocarbons. There are currently no other products that compete directly against seismic data for such purposes. Should a new product or method be introduced that was technically and/or economically comparable or superior to seismic data, Pulse's data library sales and/or the pricing thereof could be adversely affected.

CLIMATE CHANGE

The Company's seismic data library is a digital asset that is generally unaffected by climate change. Climate change, however, affects Pulse's customers, the oil and natural gas exploration and production companies who license seismic data for drilling and exploration. New carbon and environmental laws and regulations, including those related to climate change and carbon regulations, as well as the physical effects of climate change, including extreme weather events, resource shortages and changing sea levels and temperatures, may adversely affect these companies, their businesses, operations and financial condition over time and will change their exploration, development and production programs, their capital expenditures and their need for seismic data, which could result in an unmeasurable adverse impact on Pulse sales, cash flow and profitability.

The Company recognizes climate change as an increasingly important global challenge and is committed to promoting responsible energy use in its own business and operations. The Board of Directors and management of the Company routinely monitor proposed changes in carbon and environmental policy, legislation and regulation and will continue to assess the risks of climate change on the business and operations of the Company.

ADDITIONAL INFORMATION

You may find additional information relating to Pulse, including the Company's Annual Information Form, on SEDAR at www.sedar.com.

FORWARD-LOOKING INFORMATION

This document contains information that constitutes "forward-looking information" or "forward-looking statements" (collectively, "forward-looking information") within the meaning of applicable securities legislation. Forward-looking information is often, but not always, identified by the use of words such as "anticipate", "believe", "expect", "plan", "intend", "forecast", "target", "project", "guidance", "may", "will", "should", "could", "estimate", "predict" or similar words suggesting future outcomes or language suggesting an outlook.

This MD&A and, specifically, the Outlook and the Liquidity, Capital Resources and Capital Requirements sections herein contain forward-looking information which includes, but is not limited to, statements regarding:

- The outlook of the Company the year ahead, including future operating costs and expected revenues;
- Recent events on the political, economic, regulatory, public health and legal fronts affecting the industry's medium- to longer-term prospects, including progression and completion of contemplated pipeline projects;
- The Company's capital resources and sufficiency thereof to finance future operations, meet its obligations associated with financial liabilities and carry out the necessary capital expenditures through 2021;
- Pulse's capital allocation strategy;
- Pulse's dividend policy;
- Oil and natural gas prices and forecasted trends;
- Oil and natural gas drilling activity and land sales activity;
- Oil and natural gas company capital budgets;
- Future demand for seismic data;
- Future seismic data sales;
- Pulse's business and growth strategy; and
- Other expectations, beliefs, plans, goals, objectives, assumptions, information and statements about possible future events, conditions, results and performance, as they relate to the Company or to the oil and gas industry as a whole.

Sources for the forecasts and the material assumptions underlying this forward-looking information are, where applicable, noted in the relevant sections of this MD&A.

By its very nature, forward-looking information involves inherent risks and uncertainties, both general and specific, and risks that predictions, forecasts, projections and other forward-looking statements will not be achieved. Pulse does not publish specific financial goals or otherwise provide guidance, due to the inherently poor visibility of seismic revenue.

Pulse cautions readers not to place undue reliance on these statements as a number of important factors could cause the actual results to differ materially from the beliefs, plans, objectives, expectations and anticipations, estimates and intentions expressed in such forward-looking information. These factors include, but are not limited to:

- Uncertainty of the timing and volume of data sales from the recently acquired seismic data library, which was partially funded with long-term debt;
- Volatility of oil and natural gas prices;
- Risks associated with the oil and gas industry in general;
- The Company's ability to access external sources of debt and equity capital;
- Credit, liquidity and commodity price risks;
- The demand for seismic data;
- The pricing of data library licence sales;
- Cybersecurity;
- Relicensing (change-of-control) fees and partner copy sales;
- Environmental, health and safety risks; including those related to the COVID-19 pandemic;
- Federal and provincial government laws and regulations, including those pertaining to taxation, royalty rates, environmental protection, public health and safety;
- Competition;
- Dependence on key management, operations and marketing personnel;
- The loss of seismic data;
- Protection of intellectual property rights;
- The introduction of new products; and
- Climate change.

Pulse cautions that the foregoing list of factors that may affect future results is not exhaustive. Additional information on these risks and other factors which could affect the Company's operations and financial results is included under "Risk Factors" herein, under "Risk Factors" in the Company's most recent annual information form, and in the Company's most recent audited annual financial statements, management information circular, quarterly reports, material change reports and news releases. Copies of the Company's public filings are available on SEDAR at www.sedar.com.

When relying on forward-looking information to make decisions with respect to Pulse, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Furthermore, the forward-looking information contained in this MD&A is provided as of the date of this MD&A and the Company does not undertake any obligation to update publicly or to revise any of the included forward-looking information, except as required by law. The forward-looking information in this document is provided for the limited purpose of enabling current and potential investors to evaluate an investment in Pulse. Readers are cautioned that such forward-looking information may not be appropriate, and should not be used, for other purposes.

INDEPENDENT AUDITORS' REPORT

TO THE SHAREHOLDERS OF PULSE SEISMIC INC.

OPINION

We have audited the consolidated financial statements of Pulse Seismic Inc. (the Entity), which comprise:

- the consolidated statements of financial position as at December 31, 2020 and December 31, 2019
- the consolidated statements of net loss and comprehensive loss for the years then ended
- the consolidated statements of changes in equity for the years then ended
- the consolidated statements of cash flows for the years then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(Hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the Entity as at December 31, 2020 and December 31, 2019, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards (IFRS).

BASIS FOR OPINION

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *"Auditors' Responsibilities for the Audit of the Financial Statements"* section of our auditors' report.

We are independent of the Entity in accordance with the ethical requirements that are relevant to our audit of the financial statements and we have fulfilled our other responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

KEY AUDIT MATTERS

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements for the year ended December 31, 2020. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

We have determined the matters described below to be the key audit matters to be communicated in our auditors' report.

ASSESSMENT OF THE RECOVERABLE AMOUNT OF THE SEITEL CASH GENERATING UNIT ("CGU")

DESCRIPTION OF THE MATTER

We draw attention to notes 2 (f), 4 (H) and 7 to the financial statements. Significant judgment is required to assess when impairment indicators exist and impairment testing is required. The Entity assesses its seismic data library CGUs at each reporting date to determine whether there is an indication of impairment. If so, the CGUs recoverable amount is estimated and impairment recorded. The Entity performed an impairment test on its Seitel CGU as at March 31, 2020. No impairment charge was recorded based on the impairment test performed.

The estimated recoverable amount of the Seitel CGU involves certain significant assumptions including the:

- Forecasted cash flows comprised of forecasted future revenues and costs and terminal value
- Discount rate

WHY THE MATTER IS A KEY AUDIT MATTER

We identified the assessment of the recoverable amount of the Seitel CGU as a key audit matter. Significant auditor judgment was required to evaluate the results of our audit procedures regarding the Entity's significant assumptions.

HOW THE MATTER WAS ADDRESSED IN THE AUDIT

The primary procedures we performed to address this key audit matter included the following:

We compared the Entity's 2020 actual revenue and costs related to the Seitel CGU to the amount budgeted for 2020 to assess the Entity's ability to accurately forecast.

We evaluated the appropriateness of the Entity's forecasted cash flows used in the estimate of the recoverable amount by:

- Comparing the Entity's forecasted cash flows to 2020 actual results. We took into account changes in conditions and events affecting the Seitel CGU to assess the adjustments or lack of adjustments made by the Entity in arriving at forecasted cash flows.
- Comparing the Entity's forecasted cash flows used in the terminal value calculation to actual historical cash flows, taking into account the changes in conditions and events affecting the Seitel CGU to assess the adjustments, or lack of adjustments, made by the Entity in arriving at the terminal value.

We involved valuation professionals with specialized skills and knowledge, who assisted in:

- Evaluating the appropriateness of the Entity's discount rate by comparing the Entity's inputs to the discount rate to external data.

ASSESSMENT OF THE TRANSFER OF CONTROL OF SEISMIC DATA FROM DATA LIBRARY SALES

DESCRIPTION OF THE MATTER

We draw attention to notes 2(f) and 4(a) to the financial statements. The Company recognizes revenue from data library sales when a customer obtains control of seismic data. Traditional data library sales are conducted under various types of licensing agreements. These contracts may require management to use judgements to assess when control of seismic data has transferred to the customer in accordance with IFRS 15. As a result, these judgments affect the timing of revenue recognition.

WHY THE MATTER IS A KEY AUDIT MATTER

We identified the assessment of the transfer of control of seismic data from data library sales as a key audit matter. Significant auditor judgment was required to evaluate evidence of when a customer obtains control of seismic data in a data library sale.

HOW THE MATTER WAS ADDRESSED IN THE AUDIT

The primary procedures we performed to address this key audit matter included the following:

We inspected a selection of new data library sales contracts entered throughout the year to identify unique clauses contained within the contracts to evaluate the point in time at which control has been transferred to the customer.

OTHER INFORMATION

Management is responsible for the other information. Other information comprises:

- the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information included in Management's Discussion and Analysis filed with the relevant Canadian Securities Commissions as at the date of this auditors' report. If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report.

We have nothing to report in this regard.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the financial statements in accordance with International Financial Reporting Standards (IFRS), and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Entity's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Entity's financial reporting process.

AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.

  The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
- Determine, from the matters communicated with those charged with governance, those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our auditors' report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this auditors' report is Jassie Kang.

KPMG LLP

Chartered Professional Accountants

Calgary, Canada
February 17, 2021

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

(thousands of Canadian dollars)

As at December 31,	Note	**2020**	2019
ASSETS			
Cash and cash equivalents		**–**	1,356
Trade and other receivables	*6*	**7,527**	3,955
Current tax assets		**–**	76
Prepaid expenses		**248**	347
Total current assets		**7,775**	5,734
Seismic data library	*7*	**46,888**	57,853
Property and equipment		**206**	368
Long-term receivables	*6*	**1,140**	4,319
Right-of-use assets	*8*	**733**	1,230
Total non-current assets		**48,967**	63,770
Total assets		**56,742**	69,504
LIABILITIES AND SHAREHOLDERS' EQUITY			
Accounts payable and accrued liabilities		**994**	1,138
Deferred revenue	*5d*	**150**	1,594
Current portion of long-term debt	*9*	**–**	1,500
Current portion of lease liabilities	*8*	**815**	815
Current income tax liabilities		**215**	–
Total current liabilities		**2,174**	5,047
Long-term debt	*9*	**27,715**	30,011
Deferred income tax liabilities	*10b*	**962**	1,107
Lease liabilities	*8*	**543**	1,246
Other long-term payable		**82**	120
Total non-current liabilities		**29,302**	32,484
Total liabilities		**31,476**	37,531
SHAREHOLDERS' EQUITY			
Share capital	*11*	**74,581**	74,581
Contributed surplus		**2,500**	2,421
Deficit		**(51,815)**	(45,029)
Total shareholders' equity		**25,266**	31,973
Total liabilities and shareholders' equity		**56,742**	69,504

See accompanying notes to consolidated financial statements.

On behalf of the Board:

Robert Robotti
Chair of the Board

Paul Crilly
Audit and Risk Committee Chair

CONSOLIDATED STATEMENTS OF NET LOSS AND COMPREHENSIVE LOSS

(thousands of Canadian dollars except per share data)

Years ended December 31,	*Note*	**2020**	2019
Revenue			
Data library sales	*5*	**11,011**	23,635
Other revenue		**338**	520
Total revenue		**11,349**	24,155
Operating expenses			
Amortization of seismic data library	*7*	**11,348**	14,200
Salaries, internal commissions and benefits	*14*	**2,468**	4,338
Other selling, general and administrative costs	*15*	**1,292**	2,042
Restructuring costs	*18*	**203**	2,663
Depreciation		**667**	645
Total operating expenses		**15,978**	23,888
Results from operating activities		**(4,629)**	267
Financing costs			
Financing expenses	*8,9,16*	**2,200**	2,555
Interest income		**(214)**	(103)
Net financing costs		**1,986**	2,452
Loss before income taxes		**(6,615)**	(2,185)
Current income tax expense		**395**	1,775
Deferred income tax recovery		**(224)**	(549)
Income tax expense	*10d*	**171**	1,226
Net loss and comprehensive loss		**(6,786)**	(3,411)
Net loss per share, basic and diluted	*13*	**(0.13)**	(0.06)

See accompanying notes to consolidated financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(thousands of Canadian dollars, except number of shares)

	Note	Number of shares issued	Share capital	Contributed surplus	Deficit	Total equity
Balance at January 1, 2019		53,793,317	74,581	2,385	(41,728)	35,238
Net loss for the year		–	–	–	(3,411)	(3,411)
Share-based compensation	*12*	–	–	284	–	284
Settlement of vested long-term incentive plan award		–	–	(266)	–	(266)
Tax effect of equity-settled share-based compensation		–	–	18	–	18
IFRS 16, Lease adjustment				–	110	110
Balance at December 31, 2019		53,793,317	74,581	2,421	(45,029)	31,973

	Note	**Number of shares issued**	**Share capital**	**Contributed surplus**	**Deficit**	**Total equity**
Balance at January 1, 2020		**53,793,317**	**74,581**	**2,421**	**(45,029)**	**31,973**
Net loss for the year		**–**	**–**	**–**	**(6,786)**	**(6,786)**
Share-based compensation	*12*	**–**	**–**	**264**	**–**	**264**
Settlement of vested long-term incentive plan award	*12*	**–**	**–**	**(106)**	**–**	**(106)**
Tax effect of equity-settled share-based compensation	*10c*	**–**	**–**	**(79)**	**–**	**(79)**
Balance at December 31, 2020		**53,793,317**	**74,581**	**2,500**	**(51,815)**	**25,266**

See accompanying notes to consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(thousands of Canadian dollars)

Years ended December 31,	Note	2020	2019
Cash flows provided by (used in):			
Operating:			
Net loss and comprehensive loss		**(6,786)**	(3,411)
Adjustment for:			
Amortization of seismic data library	*7*	**11,348**	14,200
Depreciation		**667**	645
Loss on disposition of capital assets		**–**	8
Income tax expense	*10d*	**171**	1,226
Equity-settled share-based compensation	*12*	**264**	284
Net financing costs		**1,986**	2,452
Interest and standby fees paid		**(1,856)**	(2,040)
Interest paid (lease liabilities)	*8*	**(112)**	(151)
Interest received		**2**	26
Income tax paid		**(182)**	(1,863)
Income tax received		**78**	1,048
		5,580	12,424
Net change in non-cash working capital	*17*	**(1,766)**	(3,819)
Cash provided by operating activities		**3,814**	8,605
Financing:			
Shares purchased for equity-settled share-based payments	*12*	**(106)**	(266)
Proceeds from long-term debt	*9*	**17,978**	35,500
Repayment of long-term debt	*9*	**(21,775)**	(3,725)
Lease payments for principal	*8*	**(703)**	(634)
Debt transaction costs		**(174)**	(387)
Cash provided by (used in) financing activities		**(4,780)**	30,488
Investing:			
Seismic data purchases, digitization and related costs	*7*	**(383)**	(61,029)
Additions to property and equipment		**(7)**	(439)
Cash used in investing activities		**(390)**	(61,468)
Decrease in cash and cash equivalents		**(1,356)**	(22,375)
Cash and cash equivalents, beginning of year		**1,356**	23,731
Cash and cash equivalents, end of year		**–**	1,356

See accompanying notes to consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

INFORMATION AS AT DECEMBER 31, 2020 AND 2019 AND FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

(Tabular amounts in thousands of Canadian dollars, except per share data, numbers of shares and other exceptions as indicated).

1. REPORTING ENTITY

Pulse Seismic Inc. (the Company) was incorporated under the Canada Business Corporations Act and is a publicly-listed company on the Toronto Stock Exchange (TSX) trading under the symbol PSD and on the OTCQX International trading under the symbol PLSDF. The Company's registered office is in Calgary, Alberta. The Company is a provider of seismic data to the energy sector in western Canada.

2. BASIS OF PREPARATION

(A) STATEMENT OF COMPLIANCE

The consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS).

The consolidated financial statements were prepared by the Company's management and were approved by the Board of Directors on February 17, 2021.

(B) BASIS OF PRESENTATION

The consolidated financial statements include the accounts of the Company's wholly-owned subsidiaries. presentation.

(C) BASIS OF MEASUREMENT

The consolidated financial statements were prepared on the historical cost basis.

(D) FUNCTIONAL AND PRESENTATION CURRENCY

The consolidated financial statements are presented in Canadian dollars, the Company's functional currency. All financial information presented in Canadian dollars has been rounded to the nearest thousand, except per share data, number of shares and other exceptions as indicated.

(E) BASIS OF CONSOLIDATION

(I) JOINT OPERATIONS

Certain of the Company's seismic data library assets are jointly owned with others. The consolidated financial statements include the Company's share in the joint assets, joint liabilities, expenses incurred and income earned from the joint operations.

(II) TRANSACTIONS ELIMINATED ON CONSOLIDATION

Intra-group balances and transactions, and any unrealized income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements.

(F) USE OF ESTIMATES AND JUDGEMENTS

Preparing the consolidated financial statements in accordance with IFRS required management to make estimates and judgements that affected the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the revenue and expenses attributed to the reporting period. Actual results could differ from those estimates.

Estimates and underlying assumptions are reviewed at a minimum annually, as required by IFRS. Changes to accounting estimates are recognized in the year in which the estimates are revised and in any future years affected.

The following note provides information about critical judgements in applying accounting policies that have the most significant effect on the amounts recognized in the consolidated financial statements:

- Note 4(a) – Traditional data library sales are conducted under various types of licensing agreements. These contracts may require management to use judgement to assess when control of seismic data has transferred to the customer in accordance with IFRS 15. As a result, these judgments affect the timing of revenue recognition.
- Note 4(h) – The Company uses judgement in determining its cash-generating units (CGUs) for purposes of impairment testing. The determination was based on management's judgement in regard to the smallest identifiable group of seismic data that generates cash flows largely independent of the cash flows from other data. Changes in the determination of CGUs could have a significant impact on the carrying value of the assets and result in additional impairment charges or reversal of impairment charges in future periods.

The following notes provide information about assumptions and estimation uncertainties that could result in a material adjustment in future years:

- Note 4(f) – Amortization of seismic data library is based on management's estimates of expected future sales, expected useful lives, market developments and experience. These estimates may change due to changes in market conditions, potential prospects, exploration licence duration, exploration and development in certain areas, government regulations and general economic conditions. Because of the inherent difficulty in estimating market developments and future sales, the amortization rates might not accurately reflect the useful life of the data library. The amortization rates are adjusted if it is determined that estimated useful lives have changed.
- Note 4(h) – Impairment tests, if required, involve the estimation of future cash flows, requiring management to make judgments regarding long-term forecasts of future revenues and costs related to the seismic data library and residual values. These forecasts are subject to uncertainty as they require assumptions about demand for seismic data and future market conditions. Significant changes in these assumptions could require a provision for impairment in a future period.
- Note 4(i) – Deferred tax assets are recognized for all unused tax losses to the extent that it is probable that taxable profit will be available against which the losses can be utilized. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based on the likely timing and level of future taxable profits. The estimates of projected future taxable profits are based on a variety of factors and assumptions, many of which are subjective and outside the Company's control. Accordingly, these estimates could differ significantly from year to year, and the Company might end up realizing more or less of the deferred tax assets than it has recognized in the consolidated financial statements.
- Note 4(l) – The number of Performance Share Units (PSUs) expected to vest is based on management's estimates of expected future results and vesting criteria in subsequent years. These forecasts are uncertain as they require assumptions about future market conditions, revenues, expenses and vesting criteria. Significant changes in the assumptions could require an adjustment to the amount of share-based compensation recognized.

3. COVID-19 ESTIMATION UNCERTAINTY

In March 2020 the COVID-19 outbreak was recognized as a pandemic. In addition, global commodity prices declined significantly due to disputes between major oil-producing countries, combined with the pandemic's impact on global oil demand. Governments worldwide, including those in Canada, enacted emergency measures to combat the spread of the virus. These measures included travel bans, quarantine periods, shutdowns of numerous businesses and economic sectors, and social distancing, causing material disruption to businesses globally, resulting in a severe economic slowdown. Governments and central banks reacted with significant monetary and fiscal interventions designed to stabilize economic conditions. Global commodity prices improved in the latter half of 2020 as economies reopened to varying degrees and production cuts were reached by OPEC, which somewhat revived spending in the oil and natural gas industry. More recently, the Government of Canada approved two COVID-19 vaccines (as of year-end 2020), which began a phased administration very late in the year. Varying restrictions remain on the economy across Canada to limit the spread of COVID-19, and it remains uncertain when the global economy will return to conditions prevailing prior to COVID-19. This uncertainty continues to influence global commodity pricing, which in turn has significantly influenced the current challenging business climate for the Company.

If these conditions persist for an extended period, there may continue to be significant adverse impacts on the Company, including but not limited to:

- Material declines in revenue and cash flows as the Company's customers, which are concentrated in the oil and natural gas industry, further cut capital budgets and reduce field activities;
- Declines in revenue that could, in turn, result in an impairment charge against the Company's seismic data library asset; and
- Non-performance by the Company's customers, in turn resulting in non-payment of accounts receivable and customer defaults.

The situation surrounding COVID-19 remains dynamic and the duration and magnitude of the economic impact and financial effects on the Company cannot be determined. Estimates and judgements made by management in the preparation of the financial statements are difficult and subject to a higher degree of measurement uncertainty during this volatile period.

4. SIGNIFICANT ACCOUNTING POLICIES

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements.

(A) REVENUE RECOGNITION

(I) DATA LIBRARY SALES

Revenue for data library sales is recognized when a customer obtains control of seismic data through receipt and acceptance of the data, at which point invoices are generated. Invoices are usually payable within 30 days.

Some customers request extended payments terms which, when granted by the Company usually are not for more than one year. For such transactions, the Company discounts its account receivable and the related amount of data library sales revenue is reallocated to interest income.

(II) PARTICIPATION SURVEYS

The Company has in the past participated with customers in 3D seismic participation surveys from which the Company retains proprietary rights to the collected data and from which participating customers receive a non-transferable licensed copy.

Participation survey revenue can be recognized when the contract's deliverables are transferred and when a licensed copy of the seismic data is delivered to and accepted by the customer or customers in the case of multiple participants.

There was no participation survey revenue in 2020 and 2019.

(B) BUSINESS COMBINATIONS/ASSET ACQUISITIONS

Where appropriate, the Company applies the acquisition method to account for business combinations. The Company measures goodwill as the fair value of the consideration transferred, less the fair value of the identifiable assets acquired and liabilities assumed, all measured at the acquisition date.

The Company makes judgments on a case-by-case basis to determine whether an acquisition meets the definition of a business and , in turn, to determine whether a transaction should be accounted for as a business combination or as an asset acquisition. An optional concentration test may also be applied that permits a simplified assessment of whether an acquired set of activities and assets is a business or not.

The concentration test is met if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the test is met, the Company can elect not to account for the acquisition as a business and instead to account for the acquisition as an asset acquisition.

(C) FINANCIAL INSTRUMENTS

Financial assets of the Company include cash and cash equivalents and trade receivables. Financial liabilities of the Company mainly comprise accounts payable and accrued liabilities, other long-term payable, and long-term debt.

Classification and measurement of financial assets and financial liabilities are included in the below table:

Financial Asset (Liability)	Category	Measurement
Cash and Cash equivalents	Assets at amortized cost	Amortized cost
Accounts receivable	Assets at amortized cost	Amortized cost
Accounts payable and accrued liabilities	Financial liabilities at amortized cost	Amortized cost
Other long-term payable	Financial liabilities at amortized cost	Amortized cost
Long-term debt	Financial liabilities at amortized cost	Amortized cost

(D) CASH AND CASH EQUIVALENTS

Short-term investments with an original maturity of three months or less, net of the operating line of credit, are considered to be cash equivalents.

(E) PARTICIPATION SURVEYS IN PROGRESS

Participation surveys in progress include all expenditures related directly to specific projects and an allocation of variable overheads.

If payments are received from customers before data delivery, the amounts received are presented as deferred revenue on the consolidated statement of financial position.

Preliminary costs during the research phase of participation surveys are recognized in earnings as incurred. Development expenditures related to participation surveys are capitalized only once the survey project is deemed technically feasible, which usually occurs when the participation survey contract is signed. The expenditures capitalized include the cost of materials, subcontractor fees and labour costs that are directly attributable to the survey.

(F) SEISMIC DATA LIBRARY

The seismic data library has a finite useful life and is measured at cost less accumulated amortization and impairment losses. Additions to the seismic data library arise in two distinct ways: (i) participation surveys and (ii) the purchase of existing data. Costs directly incurred in acquiring, processing and otherwise completing seismic surveys are capitalized to the seismic data library.

Subsequent expenditures on data library assets, such as reprocessing and digitization, are capitalized only when the expenditure increases the asset's future economic benefits. All other expenditures are recognized in earnings as incurred.

Amortization is calculated over the cost of the asset.

The costs of purchased data are amortized on a straight-line basis over seven years.

Amortization is based on management's estimates of expected future sales, expected useful lives, market developments and experience. These estimates may change due to changes in market conditions, potential prospects, exploration licence duration, exploration and development in certain areas, government regulations and general economic conditions. Amortization methods and useful lives are reviewed at each financial year-end and adjusted if appropriate.

(G) PROPERTY AND EQUIPMENT

Property and equipment are recorded at cost less accumulated depreciation and impairment losses. Cost includes expenditures that are directly attributable to the acquisition of the asset.

Depreciation is calculated over the depreciable amount, which is the cost of an asset less its residual value. Depreciation is recognized in earnings over the estimated useful life of each significant component of an item of property and equipment on a straight line basis.

Depreciation is provided using the following methods:

	Straight Line
Computer hardware and software	3 years
Office equipment	5 years
Leasehold improvements	Balance of lease term

(H) IMPAIRMENT OF LONG-LIVED ASSETS

The carrying amounts of the seismic data library, property and equipment, and intangible assets are reviewed at each reporting date by management to determine whether there is an indication of impairment. If there is an indication of impairment, the asset's recoverable amount is estimated based on the higher of its fair value less costs to sell and its value in use.

Factors considered important by the Company that could trigger an impairment assessment include:

- Significant under-performance relative to expected operating results based on historical and/or projected data;
- Significant changes in the manner of the use of the asset or the strategy of the overall business; and
- Significant negative industry or economic trends.

The recoverable amount of tangible and intangible assets is the greater of value in use and fair value less costs of disposal. In assessing value in use, the estimated future cash flows are discounted to their present value using a discount rate that reflects current market assessment of the time value of money and the risks specific to the asset. For the purpose of impairment testing, assets are classified in the smallest grouping that generates cash flows from continuing use that are largely independent of the cash flows of other assets or groups (the CGU).

An impairment loss is recognized if the carrying amount of an asset or its CGU exceeds its estimated recoverable amount. Impairment losses are recognized in earnings or loss. Impairment losses recognized in respect of a CGU are allocated to the carrying amount of the assets in the unit on a pro-rata basis.

Impairment losses for assets recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased. An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount and only to the extent that the assets' carrying value does not exceed the carrying amount that would be determined, net of amortization or depreciation, if no impairment loss had been recognized.

(I) INCOME TAXES

Income tax expense comprises current and deferred tax. Income tax expense is recognized in earnings or loss except to the extent that it relates to items recognized directly in equity, in which case it is recognized in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to taxes payable in respect of previous years.

Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is measured at the tax rates expected to be applied to the temporary differences when they are reversed, based on the laws enacted or substantively enacted by the reporting date. Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realized simultaneously.

Deferred tax is not recognized for the following differences:

- The initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable income or loss; and
- Differences relating to investments in subsidiaries and jointly controlled entities to the extent that it is probable they will not be reversed in the foreseeable future.

A deferred tax asset is recognized to the extent that it is probable that future taxable income will be available against which deductible temporary differences can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable the related tax benefit will be realized.

(J) PER SHARE AMOUNTS

Basic per share amounts are calculated using the weighted average number of shares outstanding during the period.

(K) SHARE CAPITAL

Common shares are classified as equity. When shares are sold, the consideration received, including directly attributable costs, net of any tax effect, is recognized as a change in share capital. The Company purchases shares for cancellation under its normal course issuer bid. The cost of purchasing shares for cancellation is first charged to share capital to the extent of the average carrying value of the common shares purchased and the excess is charged to retained earnings. No gain or loss is recognized in the consolidated statements of net loss and comprehensive loss on the purchase, sale, issuance or cancellation of the Company's own equity instruments.

(L) SHARE-BASED PAYMENTS

The Company has a long-term incentive plan (LTIP) under which participants are granted restricted share units (RSUs) and performance share units (PSUs). All amounts awarded are at the discretion of the Board of Directors. RSUs and PSUs have accompanying dividend-equivalent rights and, therefore, additional RSUs and PSUs are issued to reflect dividends declared, if applicable, on the common shares. The plan's trustee will purchase common shares on the open market for the after-tax number of RSUs and PSUs vested with funds provided by the Company. The RSUs and PSUs are treated as equity-settled share-based payments and the related payroll taxes are treated as cash-settled share-based payments.

The compensation expense is recognized over the vesting period. For equity-settled share-based payments, the compensation expense is based on the number of RSUs and PSUs expected to vest and the market value of a common share of the Company on the grant date, with a corresponding increase to contributed surplus. For cash-settled share-based payments, the compensation expense is measured initially at the fair market value of the Company's shares at the grant date and subsequently adjusted for the additional shares granted based on the reinvestment of notional dividends and the market value of the shares at the end of each reporting period, with a corresponding increase to liabilities.

(M) EMPLOYEE BENEFITS

Short-term employee benefit obligations are calculated on an undiscounted basis and are expensed as the related services are provided.

A liability is recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Company has a current legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

(N) LEASES

At inception of a contract, the Company assesses whether a contract is or contains a lease. A contract is or contains a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. In order to perform this assessment, the Company determines whether: i) the Company has the right to obtain substantially all of the economic benefits from use of the asset through the period of use; and ii) the Company has the right to direct the use of the identified asset. The term of the lease is determined as the non-cancellable period of a lease and periods in which there is reasonable certainty the Company will exercise an option to extend or cancel a lease. The Company considers all relevant facts and circumstances that would create an economic incentive to extend or terminate a lease.

When a lease is identified, a right-of-use asset and a liability are recognized. At the commencement date of a lease, the Company measures lease liabilities at the present value of remaining lease payments, discounted using the interest rate implicit in a lease, if that rate can be readily determined. If that rate cannot be readily determined, the Company uses its incremental borrowing rate. Prospectively, the carrying amount of lease liabilities is increased by interest, offset by lease payments made. The initial cost of right-of-use assets is measured as the value of the lease liability, adjusted for any lease incentives received and initial direct costs. Right-of-use assets are depreciated over the shorter of the lease term or the useful life of the asset and recognized as cost less any accumulated depreciation and impairment losses.

(O) NET FINANCING COSTS OR INCOME

Financing expenses consist of interest and standby fee expense on long-term debt and amortization of the deferred financing costs. All borrowing costs are recognized in earnings or loss using the effective interest rate method.

Interest income is earned from term deposits and discounted accounts receivable with payment terms.

(P) GOVERNMENT GRANTS

Government grants are recognized when there is reasonable assurance that the grant will be received and all conditions associated with the grant are met. The Company has elected to deduct wage and rent subsidies received from the related expenses, salaries, internal commissions and benefits and other selling, general and administrative costs, in the period in which the costs are incurred.

5. REVENUE

DATA LIBRARY SALES

There are three ways to disaggregate the Company's data library sales: transaction type, data type and geographically. Revenue fluctuations are a normal part of the seismic data library business, and data library sales can vary significantly year-over-year by transaction type, data type and geographically.

Traditional data library sales can occur at any time. This is due to the nearly continual changes in oil and natural gas industry conditions, increased demand for seismic data covering a specific area or reservoir type ("play"), and the timing of public offerings of petroleum and natural gas rights ("land sales").

Transaction-based sales can also occur at any time. This is due to corporate merger-and-acquisition, joint venture and asset disposition activity by Pulse's customers, which is unpredictable.

The following tables provide a summary of the Company's revenue disaggregated by type:

(A) TRANSACTION TYPE

Years ended December 31,	**2020**	2019
Traditional sales	**4,271**	19,607
Transaction-based sales	**6,740**	4,028
Total data library sales	**11,011**	23,635

Traditional data library sales are conducted under various types of sale contracts. These are classified as data library sales, library cards, commitment cards and review-and-possession agreements. The unearned portion of a contract's value is deferred until Pulse's revenue recognition criteria are met, with data library sales revenue being recognized upon transfer of control of the seismic data to the customer.

There are three main types of transaction-based sales: partnership or joint venture, corporate merger or acquisition and oil and gas asset or group sales.

The first type, the partnership or joint venture sale, occurs when an oil and natural gas asset holder elects to pool their expertise, capital and/or assets with one or more new participants to explore or develop a play. Any new technical or operational participant that wishes to view or interpret the seismic data must purchase a data licence from Pulse.

The second type, a corporate merger or acquisition sale, is triggered when the seismic data is transferred to the new organization. The buyer has 30 days to determine whether they would like to pay a change-of-control fee to keep the data licence or return the data to Pulse.

In the third type, the sale of an oil and gas asset or group of assets, the related seismic data licence is not transferable. No rights to the seismic data accrue to the buyer, and there are no terms of payment in the licence agreement. Should the buyer be interested in Pulse's seismic data, they must license the data from Pulse. This type of sale is nevertheless classified as transaction-type because the triggering event is a transaction.

The precise terms of individual licence agreements can vary greatly. Change-of-control fees and joint venture copy fees may not always be payable, and licence agreements may not always be non-assignable.

(B) DATA TYPE

Years ended December 31,	**2020**	2019
2D data sales	**1,183**	2,204
3D data sales	**9,828**	21,431
Total data library sales	**11,011**	23,635

Pulse's data library consists of 2D and 3D seismic data. As 3D seismic licence contracts are generally larger than 2D seismic licence contracts, the percentage of seismic data library sales generated from 2D and 3D data sales fluctuates significantly depending on the number of 3D seismic sale contracts signed during a given period.

(C) GEOGRAPHICAL BREAKDOWN

Years ended December 31,	**2020**	2019
Alberta sales	**7,571**	15,467
British Columbia sales	**2,686**	7,440
Other area sales	**754**	728
Total data library sales	**11,011**	23,635

The Company's customers are currently and generally focusing on liquids-rich natural gas and light oil pools found primarily in a broad corridor running from northwest of Calgary, Alberta, along the Foothills of the Rocky Mountains to the British Columbia border, as compared to "dry" natural gas more often found in British Columbia, on Alberta's eastern prairies and in Saskatchewan and Manitoba. For the year ended December 31, 2020, 69 percent (2019 – 66 percent) of the data library sales were from data located in Alberta, 24 percent from British Columbia (2019 –31 percent) and 7 percent from other areas (2019 – 3 percent).

(D) DEFERRED REVENUE

	2020	2019
Opening balance, January 1	**1,594**	860
Plus:		
Acquisition during the period	**–**	1,598
New data library contracts signed during the year	**300**	–
Less:		
Revenue recognized as data library sales during the year	**1,744**	841
Revenue recognized as other revenue	**–**	23
Closing balance, December 31	**150**	1,594

Deferred revenue includes the value of the unearned portion of contracts and is deferred until the Company's revenue recognition criteria are met. In 2019, the Company acquired deferred revenue of $1.6 million through its acquisition of Seitel Canada Ltd.

6. TRADE AND OTHER RECEIVABLES

As at December 31,	2020	2019
Data library trade receivables	**7,472**	3,875
Other	**131**	292
Discounted accounts receivables - current	**(76)**	(212)
	7,527	3,955
Total long-term receivables	**1,155**	4,410
Discounted accounts receivables - long-term	**(15)**	(91)
	1,140	4,319

For the year ended December 31, 2020, discounted accounts receivables have been recorded against trade and other receivables and long-term receivables. In the prior year, the discounted accounts receivables that were recorded as deferred revenue have been corrected and reclassified as a reduction of trade and other receivables.

The Company recorded $180,000 of bad debt expense in 2019 and reversed it in 2020 after collecting the full amount from one customer.

The long-term receivables of $1.2 million are due from one customer. All payments are due in 2022.

7. SEISMIC DATA LIBRARY

	2020	2019
Cost		
Opening balance, January 1	**506,065**	445,036
Acquisitions through purchases and related cost (Note 17)	**383**	61,029
Closing balance, December 31	**506,448**	506,065
Accumulated amortization		
Opening balance, January 1	**448,212**	434,012
Amortization for the year	**11,348**	14,200
Closing balance, December 31	**459,560**	448,212
Carrying amount, December 31	**46,888**	57,853

On January 15, 2019 the Company acquired 100 percent of the shares of Seitel Canada Ltd. (Seitel) and its seismic data library (Note 18).

At December 31, 2020, the Company assessed its seismic data library CGUs for indicators of impairment as required under IFRS. It concluded there were no new indicators since the March 31, 2020 impairment test and no impairment test was performed at December 31, 2020.

At March 31, 2020, the Company assessed the CGUs in its seismic data library for indicators of impairment, as required under IFRS, and concluded there were such indicators. The principal indicator was the significant reduction in commodity prices along with uncertainty over the timing of any improvement in conjunction with the COVID-19 pandemic and its impact on the global economy. Those indicators triggered an impairment test on the Seitel data library CGU. For the purpose of impairment testing, the recoverable amount of a CGU is the greater of its value-in-use and its fair value less costs of disposal. The recoverable amount of the Seitel CGU was determined based on a value-in-use calculation, reflecting net cash flows for the next five years together with a terminal value. The Company used the following assumptions for this calculation:

- Estimated future revenues for the next five years net of variable and fixed costs, based on past performance as well as management's assessment of economic conditions, expected market trends and anticipated activity levels of the Western Canadian oil and natural gas sector;
- The terminal value of the Seitel CGU, estimated to be 40 percent of the 2024 cash flows with a decline rate of 2 percent;
- An after-tax discount rate of 11 percent to calculate the net present value of future cash flows, which is based on the Company's weighted average cost of capital calculated at March 31, 2020; and
- A combined federal-provincial income tax rate of 25 percent.

Based on these assumptions and the Company's calculations, no impairment loss was recognized.

8. ROU ASSETS AND LEASE LIABILITIES

The ROU assets and related lease liabilities are included in the tables below:

ROU Assets

As at December 31,	**2020**	2019
Office and warehouse leases	**1,230**	325
Acquisition during the period (Note 17)	**–**	1,385
Total ROU assets	**1,230**	1,710
Less		
Depreciation in the year	**(497)**	(480)
ROU assets	**733**	1,230

Lease Liabilities

As at December 31,	**2020**	2019
Opening balance	**2,061**	325
Acquisition during the period (Note 17)	**–**	2,370
Repayments on principal and interest	**(815)**	(785)
Interest expense	**112**	151
Total lease liabilities	**1,358**	2,061
Less		
Current portion	**(815)**	(815)
Long-term portion	**543**	1,246

Under IFRS 16 the initial recognition of the ROU asset is typically equal to the liability. For the office lease acquired from Seitel in January 2019, no fair value was allocated to the ROU asset as this office was not in use by Pulse and while it was available for sublease the Company was uncertain of finalizing a long-term sublease given current market conditions. The liabilities are calculated using the basic rent included in the lease agreement. The Company subsequently sub-leased the acquired office space and is recovering a portion of the monthly lease costs.

In January 2017, the Company signed a sublease agreement for an office space. This sublease expires in March 2023.

On January 15, 2019, the Company acquired Seitel and had to assume leases for a warehouse and an office space. The lease agreement for the warehouse expires in April 2022 and for the office space in November 2022.

During the year ended December 31, 2020, a total of $325,000 (2019 – $708,000) was recognized as variable lease costs in selling, general and administrative and restructuring costs.

9. LONG-TERM DEBT

	Senior term debt	Revolving credit facility	Subordinated debt	Total
Opening balance, January 1	13,875	7,900	10,000	31,775
Mandatory repayments	1,500	–	–	1,500
Other repayments	12,375	7,900	–	20,275
Other proceeds during the year	–	17,978	–	17,978
Total long-term debt	–	17,978	10,000	27,978
Deferred financing cost				(263)
Total long-term debt, net of deferred financing cost				27,715
Less current portion of revolving credit facility				–
Long-term portion				**27,715**

On January 15, 2019 the Company acquired 100 percent of the shares of Seitel. The purchase consideration included an initial cash payment of $53.6 million on closing, plus potential additional payments of up to $5.0 million, in aggregate, within two years of closing. The amount of the additional payments was determined as 50 percent of sales revenue generated from the former Seitel database prior to December 31, 2020. In April 2019, Pulse repaid $1.1 million to Seitel for sales realized in the first quarter of 2019. In July 2019, Pulse repaid the remaining $3.9 million to Seitel for sales realized in the second quarter of 2019, at which point Pulse had paid 100 percent of the maximum $5.0 million deferred payment related to the Seitel acquisition. In connection with the acquisition of Seitel (Note 18), the Company amended and restated its syndicated credit agreement. After the amendment, the facility was comprised of $15.0 million in term debt, all of which was utilized for the acquisition, and a $30.0 million revolving facility, $8.0 million of which was drawn for the acquisition.

Prior to June 5, 2020, the Company's credit facilities were comprised of a $30.0 million revolving credit facility and a $15.0 million term facility with a $40.0 million accordion feature.

On June 5, 2020, the Company amended its syndicated credit facility for a four-quarter modification period beginning on July 1, 2020. The syndicated credit facility was then comprised of $12.8 million in term debt and a $15.0 million revolving facility with $5.9 million drawn. Up to $5.0 million of the $15.0 million revolving facility remained available as an operating line of credit. The Company paid an amendment fee of $88,000 for the modifications to its credit facility.

On December 18, 2020, the Company amended and restated its credit agreement. The simplified restated credit facility is no longer syndicated and consists of a $25.0 million revolving credit facility. At December 18, 2020, the balances owing were $5.9 million on the revolving facility and $12.4 million on the term facility. The balance of the term facility has been repaid with proceeds from the revolving facility and the facility subsequently cancelled. The balance drawn on the revolving credit facility at December 31, 2020 was $18.0 million, leaving $7.0 million available. As part of the amendment, the agreement was extended by one year from January 15, 2022 to January 15, 2023. The Company paid an amendment fee of $38,000 for the modifications to its credit facility.

Significant terms of the credit facility are:

- Interest on the revolving credit facility is calculated based on the lender's prime rate, bankers' acceptance rate or LIBOR, plus an applicable margin based on the covenant ratio of total debt to adjusted EBITDA following a ten-tier structure. At December 31, 2020, the applicable interest rate on the long-term debt was 5.2 percent (December 31, 2019 – 4.7 percent), based on level 7 of the 10 of rates specified under the facility;
- Standby fees are based on the daily undrawn balance of the revolving portion of the credit facility and the Company's total debt to adjusted EBITDA ratio following the amended ten-tier margin structure. At December 31, 2020 the applicable standby fee remained at level 7 of the 10 of rates specified under the facility;
- Two-year term until January 15, 2023, with an extension of up to one year available on January 15 of every year with the approval of the lender. If the extension is not granted, any outstanding amounts will be payable on the then-current applicable maturity date; and
- Security through a charge on all of the assets of the Company and its material subsidiaries.

The restated credit facility also includes the following financial covenants:

1) MAXIMUM SENIOR DEBT TO ADJUSTED EBITDA RATIO

The senior debt to adjusted EBITDA ratio for the fourth quarter of 2020 shall not be greater than 5.5:1, not greater than 5.0:1 on March 31, 2021, not greater than 4.25:1 on June 30, 2021 and not greater than 3.0:1 for the fiscal quarters ending September 30, 2021 and thereafter.

Senior debt is total debt less subordinated debt. Total debt is determined on a consolidated basis and in accordance with IFRS.

Adjusted EBITDA is to be calculated on a trailing 12-month basis and is defined as earnings or loss before interest, income taxes, depreciation and amortization, plus extraordinary losses, non-cash losses and expense charges, and any other unusual or non-recurring cash charges, expenses or losses consented to by the lenders, less participation survey revenue, lease payments treated as capital lease, warehouse storage fees, extraordinary gains and non-cash gains and income. Adjusted EBITDA is to be adjusted for acquisitions or dispositions to reflect such acquisition or disposition as if it occurred on the first day of such calculation period.

2) MINIMUM INTEREST COVERAGE RATIO

The minimum interest coverage ratio is defined as the ratio of adjusted EBITDA to interest expense.

The minimum interest coverage ratio shall not be less than 1.5:1 from December 31, 2020 to June 30, 2021, 2.25:1 at September 30, 2021 and December 31, 2021, 2.50:1 at March 31, 2022 and June 30, 2022, and 3.0:1 in fiscal quarters ending September 30, 2022 and thereafter.

At December 31, 2020 the senior debt to adjusted EBITDA ratio was 2.4:1 and the interest coverage ratio was 3.6:1. The Company was in compliance with all covenants at December 31, 2020.

To complete the financing of the acquisition of Seitel in 2019, Pulse also entered into a five-year subordinated debt agreement for $10.0 million which matures on December 31, 2023. The agreement has no requirement to repay the principal prior to the end of term. Under its terms, the loan will accrue interest at a rate of 10 percent per annum, payable quarterly at the end of each quarter.

10. DEFERRED TAX ASSETS AND LIABILITIES

(A) UNRECOGNIZED DEFERRED TAX ASSETS

Deferred tax assets have not been recognized in respect of the following temporary differences.

As at December 31,	2020	2019
Foreign exploration and development expense (FEDE)	**785**	865
Capital losses	**3,297**	3,297
	4,082	4,162

Deferred tax assets for these items have not been recognized because utilization of FEDE against future taxable income and future capital gains are not probable.

(B) RECOGNIZED DEFERRED TAX ASSETS AND LIABILITIES

Deferred tax assets and liabilities are attributable to the following:

As at December 31,	2020	2019
Deferred income tax assets:		
Financing fees	**32**	12
Resource expenditures	**119**	148
Long-term incentive plan	**72**	142
Deferred income tax asset	**223**	302
Deferred income tax liability:		
Seismic data library and participation surveys	**1,185**	1,409
Deferred income tax liabilities	**1,185**	1,409
Net deferred income tax liabilities	**962**	1,107

(C) MOVEMENT IN TEMPORARY DIFFERENCES DURING THE YEAR

	Deferred tax liabilities (assets) January 1, 2019	Recognized in income	Recognized in equity	Deferred tax liabilities (assets) December 31, 2019
Resource expenditures	(181)	33	–	(148)
Financing costs	–	(12)	–	(12)
Long-term incentive plan	(120)	(4)	(18)	(142)
Seismic data library	1,975	(566)	–	1,409
	1,674	(549)	(18)	1,107

	Deferred tax liabilities (assets) January 1, 2020	**Recognized in income**	**Recognized in equity**	**Deferred tax liabilities (assets) December 31, 2020**
Resource expenditures	**(148)**	**29**	**–**	**(119)**
Financing costs	**(12)**	**(20)**	**–**	**(32)**
Long-term incentive plan	**(142)**	**(9)**	**79**	**(72)**
Seismic data library	**1,409**	**(224)**	**–**	**1,185**
	1,107	**(224)**	**79**	**962**

(D) RECONCILIATION OF EFFECTIVE TAX RATE

Income tax expense differs from the amount that would be computed by applying the basic combined federal and provincial statutory income tax rate to earnings before income taxes. The reasons for the differences are as follows:

Years ended December 31,	**2020**	2019
Loss before income tax	**(6,615)**	(2,185)
Combined federal and provincial income tax rate	**24%**	26.5%
Expected income tax reduction	**(1,588)**	(579)
Effects of differences:		
Non-deductible expenses	**6**	47
Adjustment in respect of prior years	**–**	9
Change in valuation allowance	**(19)**	(24)
Permanent difference related to the seismic data library acquired in January 2019	**1,890**	1,992
Permanent difference related to IFRS 16, *Leases*	**(69)**	(66)
Change in Alberta future corporate income tax rates	**(49)**	(153)
Actual income tax expense (recovery)	**171**	1,226

11. SHARE CAPITAL

The Company's authorized share capital consists of an unlimited number of common and an unlimited number of preferred shares, issuable in series. The shares have no stated par value. No preferred shares have been issued. All common shares are entitled to receive dividends as declared and are entitled to one vote per share at Company meetings.

12. SHARE-BASED PAYMENTS

The Company has a long-term incentive plan (LTIP) for employees, officers and Directors designed to align the Company's long-term incentive compensation with its performance and to increase individual share ownership.

The LTIP awards consist of restricted share units (RSUs) and performance share units (PSUs), with Directors being granted RSUs only. Upon vesting, each RSU and PSU entitles the holder to one common share of the Company. RSUs and PSUs have accompanying dividend-equivalent rights and, therefore, additional RSUs and PSUs are issued to reflect dividends declared, if applicable, on the common shares.

In determining the amount of equity-settled share-based compensation related to PSUs, management makes estimates about future results and vesting criteria. It is reasonably possible that future outcomes could differ from the estimates, which are based on current knowledge, and require a material adjustment to the share-based compensation expense recorded in future periods. The impact of any change in the number of PSUs expected to vest is recognized in the period the estimate is revised.

On March 31, 2020 186,658 RSUs and 237,113 PSUs were eligible to vest. The Company's performance in 2019 did not meet the predetermined performance benchmarks and, consequently, no PSUs vested on March 31, 2020. RSUs vest automatically based upon time and, consequently, all of the eligible RSUs vested automatically on March 31, 2020.

To satisfy its obligation, in April 2020 the Company provided $106,000 to the plan's trustee to purchase common shares on the open market for the total after-tax number of cash- and equity-settled RSUs that vested on March 31, 2020. The related payroll taxes of $102,000 were paid to settle the accrued cash-settled portion of the share-based payment liabilities.

During the year ended December 31, 2020, the Company recognized $249,000 (2019 – $534,000) in compensation expense related to the LTIP in salaries, internal commissions and benefits on the statement of comprehensive earnings. The equity-settled portion was $264,000 (2019 – $284,000).

At December 31, 2020 the obligation related to the cash-settled portion of the LTIP was $143,000 (December 31, 2019 – $259,000) with $61,000 (December 31, 2019 – $139,000) included in accounts payable and accrued liabilities and $82,000 (December 31, 2019 – $120,000) included in other long-term payable.

The following summarizes activity in the Company's LTIP during the years ended December 31, 2020 and 2019:

RSUs	**2020**	2019
Outstanding, January 1	**553,575**	528,670
Vested and exercised	**(186,658)**	(184,657)
Granted	**339,295**	224,678
Cancelled or forfeited	**(14,072)**	(15,116)
Outstanding, December 31	**692,140**	553,575

PSUs	**2020**	2019
Outstanding, January 1	**704,962**	687,938
Vested and exercised	**–**	–
Granted	**423,195**	280,435
Cancelled or forfeited	**(251,184)**	(263,411)
Outstanding, December 31	**876,973**	704,962

On March 31, 2020, 186,658 RSUs will vest automatically and, based on the Company's performance in 2019 and the predetermined performance measures, none of the PSUs will vest. In April 2020, the Company will settle its obligation to deliver the common shares by providing funds to the independent LTIP trustee to purchase the shares on the open market.

13. LOSS PER SHARE

(A) BASIC LOSS PER SHARE

The calculation of basic loss per share at December 31, 2020 was based on the net loss attributable to common shareholders of $6.8 million for the year ended December 31, 2020 (year ended December 31, 2019 – net loss of $3.4 million) and a weighted average number of common shares of 53,793,317 in 2020 and 2019.

(B) DILUTED EARNINGS PER SHARE:

The Company does not have any dilutive securities.

14. SALARIES, INTERNAL COMMISSIONS AND BENEFITS

Years ended December 31,	Note	**2020**	2019
Salaries and benefits		**1,909**	2,498
Internal commissions		**158**	319
Registered retirement savings plan contributions		**109**	127
Short-term incentives		**43**	160
Long-term incentives	12	**249**	534
Acquisition bonus		**–**	700
Total salaries, internal commissions and benefits		**2,468**	4,338

In 2020, the Company benefited from the Canada Emergency Wage Subsidy (CEWS), a government COVID-19 financial relief program, in the amount of $451,000. The Company's reported salaries and benefits expenses are net of these amounts.

15. OTHER SELLING, GENERAL AND ADMINISTRATIVE COSTS

Years ended December 31,	**2020**	2019
External commissions	**(12)**	52
Occupancy costs	**202**	311
Office and general costs	**181**	340
Information technology	**330**	343
Reprocessing and data storage	**148**	165
Directors' fees and corporate costs	**307**	369
Professional fees	**316**	282
Bad debt expense	**(180)**	180
Total other selling, general and administrative costs	**1,292**	2,042

In 2020, the Company benefited from the Canada Emergency Rent Subsidy (CERS), a government COVID-19 financial relief program, in the amount of $124,000. The Company's reported occupancy cost and other leases are net of these amounts.

The allowance for impairment of trade receivables recorded in 2019 was related to one overdue account. On July 20, 2020, the Company received payment in full from this customer and the allowance for impairment of trade receivables that had been recorded in 2019 was reversed in the third quarter of 2020 against the other selling, general and administrative costs.

16. FINANCING EXPENSES

Years ended December 31,	**2020**	2019
Interest expense	**1,734**	2,105
Standby fees	**160**	153
Deferred financing fees amortization	**174**	124
Financing fees	**20**	22
Lease liabilities interest expense	**112**	151
Total financing expenses	**2,200**	2,555

The interest expense includes the interest related to the senior credit facility and the subordinated debt.

17. NET CHANGE IN NON-CASH OPERATING WORKING CAPITAL

Years ended December 31,	**2020**	2019
Trade and other receivables	**(3,572)**	(641)
Prepaid expenses	**99**	7
Long-term receivable	**3,179**	(4,319)
Accounts payable and accrued liabilities	**(144)**	162
Deferred revenue	**(1,444)**	727
Other long-term payable	**(38)**	28
Others	**154**	217
Net change in non-cash operating working capital	**(1,766)**	(3,819)

18. SEITEL CANADA LTD. ACQUISITION AND RESTRUCTURING COSTS

On January 15, 2019, the Company acquired 100 percent of the shares of Seitel. The Company accounted for the transaction as an asset acquisition. As such, the assets acquired were recognized at cost based on their relative fair values. The Company determined the estimated fair values by reviewing and considering relevant information, including but not limited to information supplied by the vendor, quoted market prices and estimates made by management. The purchase price at the date of acquisition was allocated to net assets acquired as follows:

Assets	
Cash and cash equivalents	715
Trade and other receivables	420
Prepaid expenses and deposits	211
Seismic data library	61,029
ROU assets	1,385
Total assets	63,760

Liabilities	
Accounts payable and accrued liabilities	833
Deferred revenue	1,598
Lease liabilities	2,370
Total liabilities	4,801

Net assets acquired	58,959

Transaction costs of $144,000 associated with the acquisition were capitalized to the seismic data library.

During the year ended December 31, 2020, the Company incurred $203,000 of restructuring costs which include variable lease costs (2019 - $2.7 million). The following expenses were included in 2019: $1.5 million of severance payments related to the acquired company in January 2019, audit fees related to regulatory reporting of the Seitel acquisition, expenses related to the Seitel warehouse lease, increased marketing costs and minor SG&A expenses related to Seitel integration.

19. FINANCIAL INSTRUMENTS

The Company's risk management policy objectives include the long-term management of the Company's business activities and, wherever possible, mitigation of the associated business risks. The Company has exposure to the following risks from its use of financial instruments:

- Credit risk;
- Liquidity risk; and
- Market risk.

(A) RISK MANAGEMENT

The Board of Directors has overall responsibility for the establishment and oversight of the Company's risk management framework.

The Company's risk management policies are established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor risks and adherence to limits. The Company, through its training and management standards and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

The Audit and Risk Committee oversees how management monitors compliance with the Company's risk management policies and procedures, and reviews the adequacy of the risk management framework in relation to the risks faced by the Company. Reviews of risk management controls and procedures are performed, the results of which are reported to the Board of Directors.

(B) CREDIT RISK

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Company's accounts receivable.

The Company is exposed to credit risk in connection with data sales and participation surveys with its customers. The Company's exposure to credit risk is influenced mainly by each customer's individual characteristics. The nature of the Company's customer base, including the default risk of the industry in which customers operate, has an influence on credit risk. As the Company operates to a large extent in the oil and natural gas industry, nearly all of the trade receivables relate to customers from this industry.

The effective monitoring and control of credit risk is a core competency of the Company. Each new customer is analyzed individually for creditworthiness, including credit reference checks, before payment and delivery terms and conditions such as credit limits are offered. Customer accounts are monitored and accounts receivable aging is regularly reviewed. Certain customers have signed agreements with the Company that provide for extended payment terms. The Company's credit risk increases in these arrangements due to their longer time-frame. The risk is mitigated by attempting to limit these arrangements to major oil and natural gas companies which have long operating histories and adequate resources to fulfill their commitments.

The majority of the Company's customers have been doing business with the Company for many years, and insignificant losses have occurred in the past. The Company does not require customers to provide collateral.

EXPOSURE TO CREDIT RISK

The carrying amount of financial assets represents the maximum credit exposure. The maximum exposure to credit risk at the reporting date was the value of accounts receivable of $8.8 million. The Company has a significant concentration of customers in the oil and natural gas industry, with the majority located in Alberta. At December 31, 2020, 95 percent of total accounts receivable were due from four customers. For the year ended December 31, 2020, approximately 73 percent of the Company's data library sales were attributable to five customers.

The aging of trade receivables at the reporting date was:

	2020		2019	
	Gross	**Impairment**	Gross	Impairment
Current	**8,758**	**–**	8,318	–
Past due 31-60 days	**–**	**–**	26	–
Past due 61-90 days	**–**	**–**	26	–
More than 90 days	**–**	**–**	387	180
Total	**8,758**	**–**	8,757	180

The current and long-term accounts receivable of $8.8 million in the table above includes $2.3 million from one client benefiting from extended payment terms of which $1.2 million is due in 2022.

The allowance for impairment of trade receivables at December 31, 2019 was related to one overdue account. On July 20, 2020, the Company received payment in full from this customer. The allowance for impairment of trade receivables that had been recorded in 2019 was reversed in the third quarter of 2020 against the other selling, general and administrative costs.

Accounts receivable over 90 days are monitored and assessed for impairment. Those accounts are evaluated on a case-by-case basis using information received from the customer and market information.

As at the reporting date, the Company believes that all accounts are collectible, based on historical payment behaviour and extensive analysis of customers' underlying credit ratings.

(C) LIQUIDITY RISK

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled in cash or another financial asset. The Company's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to its reputation.

The Company regularly monitors its cash flow and funding options available in the capital markets, as well as trends in the availability and costs of such funding, with a view to maintaining financial flexibility and limiting repayment risks. The Company does not believe that it will encounter difficulty in meeting its financial obligations. Consolidated cash flow information, including a projection for the remainder of the year where applicable, is presented quarterly to the Audit and Risk Committee, which aids in planning to ensure that the Company has sufficient cash to meet expected operational expenses, including the servicing of financial obligations.

The Company has working capital of $5.6 million at December 31, 2020 in addition to $7.0 million available for future draws on its revolving credit facility.

The following are the contractual maturities of financial liabilities at December 31, 2020:

	Carrying amounts	**2021**	**2022**	**2023**	**2024 and thereafter**
Long-term debt	27,978	–	–	27,978	–
Long-term debt interest	4,909	1,935	1,935	1,039	–
Accounts payable	994	994	–	–	–
Current income tax	215	215	–	–	–
Leases	2,302	1,285	940	77	–
Long-term payable	82	–	82	–	–
Total	**36,480**	**4,429**	**2,957**	**29,094**	**–**

(D) MARKET RISK

Market risk is the risk that changes in market prices will affect the Company's income or the value of its holdings of financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

(I) COMMODITY PRICE RISK

The Company is not directly exposed to commodity price risk as it does not have any contracts that are directly based on commodity prices. A change in commodity prices, specifically oil and natural gas prices, could have a material impact on the Company's customers' cash flows and could therefore affect the level of seismic data library sales and participation surveys. Commodity prices are affected by many factors, including supply and demand. The Company has not entered into any commodity price risk contracts. Given that this is an indirect influence, the financial impact on the Company of changing oil and natural gas prices is not reasonably determinable.

(II) INTEREST RATE RISK

The Company's interest rate risk exposure is mainly related to long-term debt. The Company is exposed to interest rate cash-flow risk on its floating-rate long-term debt as described in note 9. Changes in market interest rates will cause fluctuations in future interest payments.

The Company earns minimal interest income on its cash balances.

A change of 100 basis points in interest rates for the year ended December 31, 2020 would have increased or decreased equity and earnings or loss by $289,000 in 2020 (2019 – $303,000), assuming all other variables remained constant.

(E) FAIR VALUES

The fair values of cash and cash equivalents, accounts receivable and accounts payable approximate their carrying amount largely due to the short-term maturities of these instruments.

20. CAPITAL MANAGEMENT

The Company considers its capital structure to include shareholders' equity and long-term debt.

As at December 31,	**2020**	2019
Shareholders' equity	**25,266**	31,973
Long-term debt	**27,715**	31,511
Total capitalization	**52,981**	63,484

The Company's primary objective when managing capital is to preserve its ability to execute its long-term growth plan of significantly increasing the size of the seismic data library, so that it can maximize revenue and, ultimately, shareholder value. Historically, sales generated from the seismic data library provided the Company with high levels of cash, and its most significant expense is non-cash amortization. Due to this, the Company has been able to repay long-term debt and continue to fund data library growth.

The Company requires flexibility in managing the capital structure so that it can take advantage of opportunities to raise additional capital as opportunities for data acquisitions or participation surveys arise. The Company uses a combination of debt and equity and relies on key internal measures such as the long-term debt to trailing-twelve-month cash EBITDA ratio and the long-term debt to equity ratio to forecast and structure its capital requirements. From time to time the Company purchases its own shares on the market through its normal-course issuer bid, the timing of which depends on a number of factors including competing capital allocation opportunities under review, market volume activity and market prices.

Cash EBITDA is defined by the Company as earnings before interest, taxes, depreciation and amortization less participation survey revenue, plus non-cash and non-recurring expenses. Cash EBITDA is a measure that does not have any standardized meaning prescribed by IFRS or Canadian generally accepted accounting principles and is therefore unlikely to be comparable to similar measures presented by other issuers.

The long-term debt to trailing-twelve-month cash EBITDA ratio is calculated as long-term debt at the end of the period, divided by cash EBITDA for the previous 12 months. This measure is substantially the same as the total debt to adjusted EBITDA ratio covenant in the Company's credit facility, with the exception that the covenant calculation under the credit facility allows for the addition of normalized cash flow from acquisitions for the months during the trailing 12 months that the Company didn't own the acquired data.

The total long-term debt to annual cash EBITDA ratio is calculated as follows:

Years ended December 31,	**2020**	2019
Total long-term debt at year-end	**27,715**	31,511
Divided by:		
Net loss	**(6,786)**	(3,411)
Less:		
Lease payments treated as capital lease	**(85)**	(85)
Warehouse revenue	**(300)**	(425)
Plus:		
Net financing costs	**1,986**	2,452
Income tax expense (reduction)	**171**	1,226
Depreciation	**667**	645
Amortization of seismic data library	**11,348**	14,200
Equity-settled share-based compensation	**264**	284
Restructuring costs	**203**	2,663
Loss on disposition of capital assets	**–**	8
Annual cash EBITDA	**7,468**	17,557
Total long-term debt to annual cash EBITDA ratio	**3.71:1**	1.79:1

The total long-term debt to equity ratio is calculated using the total long-term debt balance, net of debt financing costs, divided by total equity, as follows:

As at December 31,	**2020**	2019
Total long-term debt, net of debt financing cost	**27,715**	31,511
Divide by: total equity	**25,266**	31,973
Total long-term debt to equity ratio	**1.10:1**	0.99:1

As discussed in note 9, the Company is subject to debt covenants on its revolving credit facility. The Company was in compliance with all covenants.

There were no changes in the Company's approach to capital management during the year.

21. OTHER COMMITMENTS

The following table represents minimum payments under seismic data services contracts:

	2021	2022	2023	2024	2025 and thereafter
Seismic data services	494	–	–	–	–

Obligations for seismic data services contracts include geophysical services such as digitization and data storage.

During the year ended December 31, 2020, $153,000 (2019 – $170,000) was recognized in selling, general and administrative expenses in respect of seismic data services.

22. RELATED-PARTY TRANSACTIONS

The Company has a related-party relationship with its Board of Directors and with key management personnel.

(A) KEY MANAGEMENT PERSONNEL COMPENSATION

In addition to their salaries, the executive officers participate in the Company's short-term incentive cash-bonus plan and LTIP (refer to note 12).

Key management personnel compensation comprised:

Years ended December 31,	2020	2019
Fixed salary	**724**	822
Short-term employee benefits	**59**	70
Short-term incentive plan	**124**	104
LTIP	**105**	217
Acquisition bonus	**–**	560
	1,012	1,773

(B) TRANSACTIONS WITH DIRECTORS

Directors also participate in the Company's LTIP (refer to note 12).

The remuneration of the Directors is as follows:

Years ended December 31,	2020	2019
Directors' fees	**164**	206
LTIP	**40**	65
	204	271

(C) INSTITUTIONAL SHAREHOLDER

In 2020, EdgePoint Investment Group Inc. (EdgePoint), an. institutional shareholder in the Company,increased its ownership in the Company by 6 percent, bringing its total position from 18.4 percent of the Company's total outstanding shares as of December 31, 2019 to 24.6 percent as of December 31, 2020.

EdgePoint is also the holder of the $10.0 million subordinated debt that Pulse utilized to acquire Seitel Canada Ltd. in January 2019. The balance of the subordinated debt at December 31, 2020 was $10.0 million. As explained in Note 9 above, the agreement has no requirement to repay the principal prior to the end of term in 2023.

Under the term, the subordinated debt accrues interest at a rate of 10 percent per annum, payable quarterly at the end of each quarter. For the year ended December 31, 2020, the interest expense related to the subordinated debt was $1.0 million (year ended December 31, 2019 - $959,000).

CORPORATE INFORMATION

Pulse is a market leader in the acquisition, marketing and licensing of 2D and 3D seismic data to the western Canadian energy sector. Pulse owns the largest licensable seismic data library in Canada, currently consisting of approximately 65,310 net square kilometres of 3D seismic and 829,207 net kilometres of 2D seismic. The library extensively covers the Western Canada Sedimentary Basin where most of Canada's oil and natural gas exploration and development occur.

OFFICERS

Neal Coleman
President and CEO

Pamela Wicks
Vice President Finance and CFO

Trevor Meier
Vice President, Sales and Marketing

Catherine Samuel
Corporate Secretary

BOARD OF DIRECTORS

Robert Robotti (1) (2) (3)
Chair

Karen El-Tawil (2) (4)
Director

Paul Crilly (1) (3)
Director

Dallas Droppo (1) (2) (3)
Director

Grant Grimsrud (2) (4)
Director

Neal Coleman (4)
Director

(1) Member of the Audit and Risk Committee

(2) Member of the Compensation Committee

(3) Member of the Corporate Governance and Nominating Committee

(4) Member of the Environment, Health and Safety Committee

BANKERS

The Toronto-Dominion Bank
Calgary, Alberta

REGISTRAR AND TRANSFER AGENT

Computershare Trust Company of Canada
Calgary, Alberta

SOLICITORS

McCarthy Tétrault LLP
Calgary, Alberta

AUDITORS

KPMG LLP
Calgary, Alberta

STOCK EXCHANGE LISTING

TSX: PSD
OTCQX: PLSDF

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