IN THE MATTER OF AN ARBITRATION UNDER CHAPTER ELEVEN OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE UNCITRAL ARBITRATION RULES (1976)

-between-

THEODORE DAVID EINARSSON, HAROLD PAUL EINARSSON, RUSSELL JOHN EINARSSON, and GEOPHYSICAL SERVICE INCORPORATED

("Claimants")

-and-

THE GOVERNMENT OF CANADA

("Respondent")

ICSID CASE NO. UNCT/20/6

EXPERT REPORT OF PAUL SHARP
of PricewaterhouseCoopers LLP

CER-02

BORDEN LADNER GERVAIS LLP
1900, 520 - 3rd Avenue SW
Calgary, AB T2P 0R3
Canada

Matti Lemmens
Counsel for Theodore David Einarsson, Harold Paul Einarsson, Russell John Einarsson and Geophysical Service Incorporated

Expert Report of Paul Sharp of PricewaterhouseCoopers LLP

CER-02

Please see the attached Appendix "A" of which includes my report in its entirety.

I make this witness statement and expert report in support of the Claimants' claim in this proceeding and for no other purposes.

I swear this expert report in English.

Signed at Calgary, Alberta on September 26, 2022

[Publication]

PAUL SHARP
PRICEWATERHOUSECOOPERS LLP
111-5th Avenue SW
Suite 3100
Calgary AB T2P 5L3
Canada

Appendix "A"

Public Version

Valuations

Einarsson et al. v. Canada, ICSID CASE NO. UNCT/20/6

Fair Market Value of Geophysical Service Inc. in a But-for Scenario as of November 30, 2017 and June 30, 2022

Privileged and confidential

September 26, 2022

pwc

pwc

Ms. Matti Lemmens, Partner
Borden Ladner Gervais LLP
Centennial Place, East Tower
1900, 520 – 3rd Avenue SW
Calgary AB T2P 0R3

September 26, 2022

Dear Ms. Lemmens,

PricewaterhouseCoopers LLP ("PwC", "we" or "us") has been engaged by Borden Ladner Gervais LLP ("BLG" or "Counsel") to provide an expert report that includes an estimate level valuation report (the "Report") with respect to the fair market value of Geophysical Service Incorporated ("GSI" or the "Company") assuming a scenario wherein certain actions on the part of the Government of Canada did not occur ("But-for Scenario") as of November 30, 2017 and June 30, 2022 (the "Valuation Dates") as well as certain other quantifications of loss as requested by you including a quantification of loss of employment earnings, a quantification of loss of certain amounts lent to GSI, and a quantification of interest accrued on the aforementioned losses up to June 30, 2022.

We prepared this Report in accordance with the engagement letter dated May 20, 2022, and the Report is subject to the terms, conditions, and the scope limitation (as described in this Report's Terms of Reference) included therein.

The Report is provided solely for your use for the purpose stated in the above-noted engagement letter and should not be used for any other purpose, or be provided to any third parties, except in connection with processes or proceedings as noted in our engagement letter. In the event that our Report is to be distributed to another party, a release letter must be received from that party prior to distribution.

This Report was prepared in the English language. I am available to testify in this proceeding in English. I affirm this Report is in English.

Should you have any questions regarding the Report, or if we may be of further assistance, please contact us.

Yours very truly,

PricewaterhouseCoopers LLP

Paul Sharp, CPA, CA, CBV
Partner, Deals

PricewaterhouseCoopers LLP
111-5th Avenue SW, Suite 3100
Calgary AB T2P 5L3
T: 403 509 7500
F: 403 781 1825

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At a Glance – Approach and Conclusion

Valuation Methodology

1. An income approach was selected to value the shareholdings in GSI; more specifically, the capitalized cash flow ("CCF") method[1].
2. In selecting this method, we considered a number of factors, including:
   2.1. Based on our analysis and the assumptions provided to us, in the But-for Scenario, GSI would have been a going concern; and
   2.2. The Company did not have multi-year forecasts that contemplated the But-for Scenario at the Valuation Dates which would be required to perform a discounted cash flow method.
3. As tests of reasonableness, we reviewed both somewhat comparable public company metrics and somewhat comparable transaction multiples. In particular, we reviewed the following metrics:
   3.1. Enterprise value ("EV")/Maintainable EBITDA.
4. Our selected valuation methodology and tests of reasonableness are described in further detail in Section 3, Valuation Analysis.
5. We also considered an asset-based approach, which would consider, as part of it, a standalone value analysis for GSI's seismic data collection. Our research did not yield sufficient independent data points in order to facilitate a robust analysis and accordingly, this analysis has not been included in this Report.

Conclusion

6. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, the fair market values in a But-for Scenario of GSI at the Valuation Dates are summarized in the following table.
7. We note that a valuation is not a precise science and the conclusions arrived at, in many cases, will of necessity, be subjective and dependent on the exercise of individual judgement. For the purposes of the Report, we have expressed our conclusions of value as falling within a likely range.

[1] Please refer to Appendix 3 for a description of various valuation approaches and methods.

Summary of Value
(In $CAD 000's)

November 30, 2017	Low	High
Enterprise value	363,160	448,926
FMV to Messrs. Einarsson	349,049	434,815
FMV to shareholders	347,668	433,433
Equity value	343,798	429,564

June 30, 2022	Low	High
Enterprise value	271,052	338,559
FMV to Messrs. Einarsson	257,073	324,579
FMV to shareholders	255,844	323,350
Equity value	252,236	319,742

8. With respect to quantifications of loss requested by Counsel, a summary of the results of those calculations is also presented in the following paragraphs and tables.

Equity Value

9. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the lost equity value of the Company at the Valuation Dates, our conclusions are summarized in the following table.

Lost Equity Value
(In $CAD 000's)

	Low	High
November 30, 2017		
Lost equity value	343,798	429,564
Accrued interest on lost equity value	36,280	77,345
Total	380,078	506,909
June 30, 2022		
Lost equity value	252,236	319,742

Loss on Loan from Shareholder of Affiliate

10. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss on loan from shareholder of affiliate at the Valuation Dates, our conclusions are summarized in the following table.

Loss on Loan from Shareholder of Affiliate
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,382	1,382
Accrued interest up to June 30, 2022	130	276
Total loss at June 30, 2022	1,511	1,658

Loss of Shareholder's Loan – Mr. Davey Einarsson

11. With respect to the loss of Mr. Davey Einarsson's shareholder loan at the Valuation Dates, our conclusions are summarized in the following table.

Loss of Shareholder's Loan - Mr. Davey Einarsson
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	2,391	2,391
Accrued interest up to June 30, 2022	224	478
Total loss at June 30, 2022	2,616	2,870

Loss of Shareholder's Loan – Mr. Paul Einarsson

12. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of Mr. Paul Einarsson's shareholder loan at the Valuation Dates, our conclusions are summarized in the following table.

Loss of Shareholder's Loan - Mr. Paul Einarsson
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,478	1,478
Accrued interest up to June 30, 2022	139	296
Total loss at June 30, 2022	1,616	1,773

Loss of Employment Earnings – Mr. Davey Einarsson

13. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Davey Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Davey Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	1,020	1,058
Accrued interest on loss	111	236
Total	1,130	1,294

Loss of Employment Earnings – Mr. Paul Einarsson

14. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Paul Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Paul Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	7,536	10,175
Accrued interest on loss	179	380
Total	7,715	10,555

Loss of Employment Earnings – Mr. Russell Einarsson

15. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Russell Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Russell Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	4,462	6,141
Accrued interest on loss	101	215
Total	4,564	6,356

At a Glance – Terms of Reference

Terms of Reference

16. The Report is required in connection with an arbitration initiated by Mr. Theodore David Einarsson ("Mr. Davey Einarsson"), Mr. Harold Paul Einarsson ("Mr. Paul Einarsson"), and Mr. Russell John Einarsson ("Mr. Russell Einarsson") (collectively, "Messrs. Einarsson") on their own behalf and on the behalf of GSI (collectively, the "Claimants") against the Government of Canada pursuant to Article 3 of the Arbitration Rules of the United Nations Commission on International Trade Law and Articles 1116, 1117, and 1120 of the North American Free Trade Agreement.

17. The Report is provided solely for your use for the foregoing stated purpose and should not be used for any other purpose, or be provided to any third parties. In the event that our Report is to be distributed to another party, other than in connection with the processes or proceedings as noted in our engagement letter, a release letter must be received from that party prior to distribution.

18. The Report is an Expert Report which also contains an Estimate Valuation Report. These terms are set out in the Practice Standards of the Canadian Institute of Chartered Business Valuators ("CBV Institute").

19. All references to currency in the Report, including its Appendices and Schedules, are to Canadian dollars ("$"), unless otherwise stated.

20. Throughout the Report, we use various terms and abbreviations, which have been summarized in the Glossary, set out in Appendix 6.

21. The Scope of Our Work and the Restrictions & Qualifications are set out in Appendices 1 and 2, respectively. They are an integral part of the Report.

Scope Limitation

22. Due to the nature of this mandate, the sweeping and pervasive impact of Canadian Court decisions that deprived GSI the right to enforce intellectual property laws on its data (which had been disclosed by certain Canadian governmental organizations) and the passage of time between the occurrence of those disclosures and our Valuation Dates, the validity of the assumptions forming the basis of the But-for Scenario cannot be fully corroborated. We have relied on these assumptions which have been identified in this Report as assumptions taken from Mr. Paul Einarsson's witness statement (the "Witness Statement"), and for the purposes of this Report, treated them as facts.

At a Glance – Value Definition

Definition of Fair Market Value

23. FMV is defined by the CBV Institute as "the highest price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

24. FMV represents the intrinsic value of an asset or share. Price reflects the final negotiated terms with respect to the purchase and sale of an asset or share. Price may differ from FMV arrived at in a notional context as a result of a variety of factors, including type of consideration paid (i.e. cash versus shares), timing of receipt of consideration (i.e. current versus deferred), different knowledge or information levels and unequal bargaining positions of the vendor and purchaser.

25. The actual market price achieved may be higher or lower than the FMV, depending upon the circumstances of the transaction (for example the competitive bidding environment) or the nature of the business (for example the purchaser's perception of potential synergies). The knowledge, negotiating ability and motivation of the buyers and sellers and the applicability of a discount or premium for control will also affect the actual market price achieved. Accordingly, FMV is not necessarily the price at which any transaction proceeds. The final transaction price is something on which the parties themselves have to agree.

Special Purchasers

26. In view of the nature of this assignment, we were not able to expose the shares of GSI to the marketplace to determine whether there are any potential special purchasers who, for their own unique reasons (e.g., specific perceived synergies), might be prepared to entertain a value other than that determined by us herein. We have not received any information that would allow us to quantify any potential synergies that may be realized from any potential special purchasers.

Major assumptions

In preparing the Report, we made the following assumptions, in addition to those set out throughout the Report, including its Appendices and Schedules. Amendment of any of these assumptions could materially impact our conclusions reached herein.

27. The Report is based on the most current financial and operational information to the Valuation Dates;
28. Business overview information relating to GSI is historically accurate and complete;
29. Historical financial statements accurately reflect the Company's historical operating results and financial positions;
30. Certain key valuation assumptions were obtained from the witness statement of Mr. Paul Einarsson. These assumptions, as well as the surrounding context, are described in detail throughout the Valuation Analysis section of this Report and are identified as such. For the purposes of this Report, we have assumed these assumptions to be reasonable;
31. The net book values ("NBV") of cash, non-cash debt-free net working capital, property and equipment approximated their respective FMVs, unless otherwise noted herein;
32. The level of net working capital (excluding cash) in the But-for Scenario is the required amount to sustain ongoing operations;
33. Unless otherwise stated, there are no environmental obligations that would materially impact the value of the Company's operations;
34. In the But-for Scenario, unless otherwise stated, there are no lawsuits against the Company that would materially impact the value of the Company;
35. In the But-for Scenario, there are no material outstanding litigation matters or other contingencies, positive or negative, other than as disclosed herein;
36. In the But-for Scenario, the Company has valid title to all of its properties, the property rights are good and marketable, and there are no encumbrances that cannot be cleared through normal processes, unless otherwise stated in the Report;
37. In the But-for Scenario, there are no declared but unpaid dividends as at the Valuation Dates;
38. In the But-for Scenario, there are no material unrecorded assets or liabilities, unless otherwise stated;
39. In the But-for Scenario, there are no redundant assets or liabilities, unless otherwise stated;
40. Any leases are at market rates and are expected to be renewed at market terms in the future;
41. There are no special purchasers that would pay a premium to acquire the Company;
42. The combined federal and provincial corporate income tax rates of approximately 27.5% at November 30, 2017 and 25.5% at June 30, 2022 represent appropriate rates to apply to future earnings of the Company. Our calculation of these tax rates are summarized in Section 3;
43. GSI can obtain or renew all required licenses, or other legislative or administrative authorities from all applicable government or private organizations that are relevant for this analysis; and
44. The information contained in the Background section of this Report is accurate and complete.
45. Amendment of any of these assumptions could materially impact our conclusions reached herein.

Our Analysis and Conclusion

Background

46. For the purposes of our Report, we have accepted the following background information as fact.

Geophysical Service Incorporated

47. GSI's predecessor was originally founded in the 1930s in the United States to offer the first ever reflection seismograph exploration services to the oil industry ("Original GSI" or the "Preceding Company"). Original GSI later expanded into electronics manufacturing and changed its name to Texas Instruments and the seismic business became a wholly-owned subsidiary. The seismic business was later bought by Halliburton in 1988.

48. In the early 1990s, Mr. Davey Einarsson, who had been an employee of Original GSI and managed the Preceding Company's Canadian offshore coverage, purchased the proprietary rights to Original GSI's speculative data in the Canadian offshore and formed GSI based in Calgary, AB.

49. GSI provides exclusive and non-exclusive 2D and 3D marine seismic data, gravity and magnetic data off the coasts of Nova Scotia, Newfoundland and Labrador, as well as the Arctic Islands, Beaufort Sea and offshore southern Atlantic.

50. Current management of GSI includes Mr. Davey Einarsson who serves as the President of GSI and Mr. Paul Einarsson who fulfils the role of Chairman (and until 2017, Chief Operating Officer). Mr. Russell Einarsson served as Vice President, Marketing until 2013. We understand that these two individuals left their roles because the Company was not able to pay them.

51. GSI is a private corporation and its executives are shareholders (or related to shareholders). We understand that Mr. Davey Einarsson, Mr. Paul Einarsson, and Mr. Russell Einarsson were paid amounts that often differed from a market rate of compensation (i.e., an amount that an unrelated, non-shareholder executive would command).

52. The seismic data provided to clients, generally oil and gas exploration and production ("E&P") companies, by GSI can be generally categorized into two categories: exclusive data and non-exclusive data. Exclusive data is that which is specifically shot on a contract basis at the request of clients. Non-exclusive data is exploratory data shot by GSI and then licensed to (often multiple) clients in exchange for license fees. We understand that a majority of GSI's revenues over the years have come from non-exclusive data licensing.

53. License fees on non-exclusive data are charged to clients when they initially purchase access to the data. We understand that GSI's licensing contracts are structured in such a way that there are certain "trigger" points upon which further license fees are due. Those trigger points include:

    53.1. When a client joins an industry exploratory group (these groups are common in the sphere of Canadian offshore oil and gas exploration), thus providing data access to other E&P companies in that group; and

    53.2. Upon a merger or acquisition which would allow another E&P company access to the data.

54. We understand that GSI has data in all of Canada's prime offshore areas. As per discussion with GSI management, GSI pioneered the exploration for data in many of Canada's offshore production areas and its data was used by producers in many of Canada's largest offshore projects including Hibernia, Hebron, Terra Nova, White Rose, and Bay du Nord.

Background

55. GSI's clients have included E&P companies in the Canadian offshore, including Statoil (now known as Equinor), Repsol, BG Group, British Petroleum, Canadian Superior, Hunt Oil, Encana (now known as Ovintiv),Cenovus, ConocoPhillips, Suncor/Petro-Canada, and Husky.

56. GSI's cost structure comprises direct costs, which include acquisition costs and other costs directly associated with the provision of marine seismic data to GSI's customers, and indirect costs ("G&A"), which are primarily fixed overhead costs.

57. Variable direct costs include mostly costs related to shooting new data; its previously shot data (i.e., "shelf" data) can be provided to customers at minimal cost.

Historical Operating Performance

58. GSI's revenues and expenses from 1994 to 2021 for the years ended December 31, as well as trailing-twelve-month ("TTM") figures at November 30, 2017 and June 30, 2022 are summarized at Schedule D1.

59. Historically, revenues primarily consisted of licensing of data shot within the year and peaked between 2000 and 2008. During this period, revenues ranged [redacted]

60. During this same period, gross margin (i.e., revenues minus direct expenses) ranged between [redacted]

61. General and administrative expenses ranged during the 2000 to 2008 period from a low of [redacted]

62. From 2000 to 2008, EBITDA ranged from $1.3 million to [redacted] The following chart summarizes GSI's operating performance from 2000 to 2008.

[redacted]

Background

Historical Financial Position

63. GSI's assets and liabilities at December 31, 1994 to 2021 and at November 30, 2017 and June 30, 2022 are summarized at Schedule D2.

64. GSI's net tangible assets were primarily composed of [redacted] Between 2000 and 2008, the net book value of capital assets [redacted] from [redacted] in 2000 to a [redacted] of [redacted] in 2006, declining to [redacted] in 2008. From 2009 to 2012, capital assets [redacted] to a net book value of approximately [redacted] as we understand that the [redacted]

65. GSI's [redacted] debt [redacted] in 2008 at [redacted]. We understand that GSI management used debt primarily [redacted]

66. Shareholder loans totalled approximately [redacted] at November 30, 2017 and [redacted] at June 30, 2022. Advances from related parties (other than shareholders) were [redacted]

Our Understanding of the Current Situation

67. We understand that GSI was required to submit all non-exclusive data that was shot within Canada to Canadian governmental agencies. We understand that certain of this data was then disclosed to and copied by third parties (the "Disclosures") and governmental agencies. GSI was then unable to enforce its intellectual property rights against those third parties as a result of certain Canadian Court decisions that became final on November 30, 2017.

68. Because the majority of GSI's business was from the licensing of non-exclusive data to third parties, we understand that its inability to enforce its intellectual property rights relating to its seismic data has materially reduced the demand of GSI to license its existing library of data. With this revenue stream in an impaired state, GSI had been forced to limit its shooting of new data, limit new investment, and reduce its staff count.

69. As well, as a result of the Disclosures, GSI's attempts to enforce its intellectual property rights related to its seismic data resulted in litigation against its historical clients who had accessed the disclosed data ("Disclosed Data"), thus negatively affecting GSI's client relationships resulting in further lost license fees from those existing clients.

70. Based on Mr. Paul Einarsson's Witness Statement, we understand that invoices dated between 2011 to 2016 (for contractual obligations arising between 2007 and 2016) totalling $474.7 million were not paid.

71. We understand that the Disclosures and the subsequent Canadian Court decisions have had the effect of decreasing the fair market value of GSI at the Valuation Dates to $nil.

Valuation Approach

72. In approaching a valuation, there are several generally accepted methods for determining the enterprise value or equity interests of a company. In general, valuations are based on one or more of the following major approaches:

    72.1. The income approach;

    72.2. The market approach; and

    72.3. The asset approach.

73. A more detailed description of the various valuation approaches and methodologies is presented in Appendix 3.

74. An income approach was selected to value GSI in the But-for Scenario, more specifically, the capitalized cash flow method.

75. In selecting this method, we considered a number of factors, including:

    75.1. Based on our analysis and the assumptions provided to us, in the But-for Scenario, GSI would have been a going concern at the Valuation Dates; and

    75.2. The Company did not have multi-year forecasts that contemplated the But-for Scenario at the Valuation Dates which would be required to perform a discounted cash flow method.

76. As tests of reasonableness, we considered the market approach whereby we reviewed both somewhat comparable public company multiples and somewhat comparable transaction multiples. In particular, we reviewed the following metrics at both November 30, 2017 and June 30, 2022:

    76.1. EV/Maintainable EBITDA.

77. We also considered an asset-based approach, which would consider, as part of it, a standalone value analysis for GSI's seismic data collection. Our research did not yield sufficient independent data points in order to facilitate a robust analysis and accordingly, this analysis has not been included in this Report.

Income Approach – Capitalized Cash Flow

An income approach, specifically the CCF method, was used to determine the FMV of GSI. The discussion below summarizes details on the application of the CCF method and the selection of maintainable revenue and derivation of maintainable EBITDA are presented below.

Overview and Approach

78. To determine the value of a business applying the CCF method, normally the reported earnings, usually for a representative period of preceding years (which should generally serve as a guide to future trends), and possible forecasted earnings, are adjusted in respect of:

    78.1. Extraordinary, non-recurring and unusual items that would otherwise distort the estimate of future profits;

    78.2. Non-arm's length transactions that may be of an uneconomic or discretionary nature;

    78.3. Consistency with the operating conditions that are expected to prevail at and after the valuation date; and

    78.4. Additions to, or reductions in, capital employed.

79. The maintainable earnings determined based on these results are then divided by a capitalization rate in order to arrive at the capitalized earnings value or going-concern value of the operations. To this amount, the net realizable value of any redundant assets or liabilities is added (or deducted) to arrive at the en bloc value of all its issued and outstanding shares (and other forms of equity capital, as appropriate).

80. In our But-for Scenario valuation, we normalized historical earnings by first normalizing revenues and selecting a maintainable level of revenues. Maintainable revenues were based on historical normalized revenues and a review of certain forecast industry indicators. Using our selected maintainable revenues, we determined maintainable EBITDA by deducting direct costs and G&A, both based on historical averages.

Normalized Revenues

81. GSI management provided certain assumptions associated with the Disclosed Data as well as unpaid revenues from clients under contract. Normalized historical revenues from 2000 to 2012 were calculated based on these assumptions. Refer to Schedules B2.1 and C2.1 for our normalized revenue calculations at November 30, 2017 and June 30, 2022, respectively.

Lost Revenues from Access of Disclosed Data

82. We understand that information about the Disclosures was provided by the National Energy Board ("NEB", now known as the Canadian Energy Regulator), the Canada-Newfoundland and Labrador Offshore Petroleum Board ("CNLOPB") and the Canada-Nova Scotia Offshore Petroleum Board ("CNSOPB"). This information provided instances of Disclosures from 1987 to 2012 and is hereinafter referred to as the "Board Data". The Board Data was prepared based on Access to Information Act responses and may not be exhaustive. We understand that there may be additional Disclosures that are not included in the Board Data.

83. The Board Data information included the date of access and the name of the party requesting access. The parties requesting access could be broadly categorized into three buckets:

    83.1. E&P companies;

    83.2. Seismic data contractors and copy/scanning companies; and

    83.3. Government/non-profit institutions.

Income Approach – Capitalized Cash Flow

An income approach, specifically the CCF method, was used to determine the FMV of GSI. The discussion below summarizes details on the application of the CCF method and the selection of maintainable revenue and derivation of maintainable EBITDA are presented below.

84. In addition to the information provided by regulators in the Board Data, for each instance of Disclosed Data, GSI management provided GSI's listed price (in U.S. dollars) for a single licence pertaining to such data.

85. Furthermore, we were instructed by GSI management and Counsel to apply certain multipliers to those listed prices, which are based on Mr. Paul Einarsson's Witness Statement:

    85.1. E&P companies – 2.0x;

    85.2. Seismic data contractors – 3.0x; and

    85.3. Government/non-profit institutions – 0.0x.

86. We understand that the multiplier for E&P companies is intended to capture the fact that the same data is often licensed more than once to the same client as a client's admission into an industry exploration group or a merger/takeover would trigger another license fee.

87. We understand that in instances where seismic data contractors accessed the data, a multiple of 3.0x is intended to capture the fact that these parties likely intended to repackage and sell the data to their own customers. Given that these competing seismic data contractors did not incur the significant costs of shooting and processing the data, they would have the ability to capture and sell the data to their own customers for a much lower price.

88. Finally, we understand that government and non-profit institutions such as post-secondary institutions that have accessed the data were likely not doing so for commercial purposes and would not have actually licensed the data at market value (or would have potentially had free access anyway). Accordingly, we have been instructed to use a multiple of zero.

89. We have been instructed by Counsel to assume that each instance of access would have resulted in license fees (i.e., the accessing parties would have paid for the data in the normal course of business) except for instances where the Disclosed Data was accessed by the government/non-profit institutions.

90. The multiplied market value of licensing revenues for each instance of Disclosed Data was then spread evenly over three years, as instructed by Counsel based on information provided in Mr. Paul Einarsson's Witness Statement. This is to account for the fact that multiple instances of license fees would likely have been received over a multi-year period.

91. The normalization adjustment is the sum of the amounts allocated to each year, converted from U.S. dollars to Canadian dollars. The abbreviated results from 2000 to 2012 are set out in the table below and detailed at Schedules B2.1 and C2.1.

Annual Normalization Adjustment for Improperly Access Data

($CAD 000's)

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Income Approach – Capitalized Cash Flow

An income approach, specifically the CCF method, was used to determine the FMV of GSI. The discussion below summarizes details on the application of the CCF method and the selection of maintainable revenue and derivation of maintainable EBITDA are presented below.

Unpaid Revenues

92. Unpaid revenues from clients under contract consist of license fees owed to GSI from existing clients. We understand that as GSI became embroiled in disputes related to and stemming from the Disclosures, many of GSI's customers ceased paying for services and license fees that GSI would have been entitled to. GSI management has provided us with a listing of such invoices from 2011 to 2016 ("Unpaid Invoice Listing").

93. We understand based on Mr. Paul Einarsson's Witness Statement these amounts were not already included in GSI's historical revenues.

94. We understand that the invoice date does not necessarily correspond to the date that the services were provided or that the license fees would have become due. We understand that fees on these invoices generally spanned a multi-year period and we have been instructed by Counsel based on information in Mr. Paul Einarsson's Witness Statement to split the amounts evenly between the year of the invoice and the four preceding years.

95. We also understand that the invoiced amounts as noted in the Unpaid Invoice Listing were denoted in U.S. dollars; accordingly, for the purposes of calculating the annual normalization to revenues, we converted the annual amounts to Canadian dollars.

96. The following table summarizes the annual normalization adjustment associated with unpaid revenues from clients under contract from 2000 to 2012 as detailed at Schedules B2.1 and C2.1.

Unpaid Revenues from Clients Under Contract

($CAD 000's)

[redacted]

Normalized Revenues

97. From 2000 to 2012, total normalization adjustments averaged [redacted] per year.

98. The chart below compares actual revenues to normalized revenues from 2000 to 2012.

Income Approach – Capitalized Cash Flow

An income approach, specifically the CCF method, was used to determine the FMV of GSI. The discussion below summarizes details on the application of the CCF method and the selection of maintainable revenue and derivation of maintainable EBITDA are presented below.

[redacted]

Maintainable Revenues

99. For the purposes of selecting maintainable revenues at our Valuation Dates, we considered the historical years 2000 to 2012 as the Board Data is limited after 2012.

100. As our Valuation Dates are after the period of normalization (2000 to 2012), we extrapolated normalized revenues in order to understand how revenues may have moved between the end of 2012 and our Valuation Dates.

101. In order to perform this extrapolation, we examined several industry activity indicators in order to understand which metric had the strongest relationship with normalized revenues over the 2000 to 2012 period.

102. We reviewed a number of potential quantitative indicators, including the West Texas Intermediate spot price, aggregate capital spending across the North American oil and gas industry[2], and global offshore rig count data. In total we looked at eight metrics and we compared them to both normalized revenues in Canadian dollars and normalized revenues in U.S. dollars.

103. We note that GSI revenues may not coincide with a particular indicator (e.g., the purchase of seismic data may precede an increase in rig count or conversely, an increase in spot price may precede the purchase of seismic data). For such metrics, we have judgmentally shifted the metric by one year. For example, for global offshore rig count, we compared the change from 2007 to 2008 normalized revenues to the change in 2008 to 2009 rig count in order to reflect the passage of time between the purchase and use of seismic data by E&P companies and their decision to ultimately proceed with drilling and to obtain the necessary regulatory approvals/licenses to do so.

104. The following table summarizes the metrics we examined and the judgmentally-selected shift that we applied.

[2] Total North American capital expenditures based on a screening in S&P Capital IQ for North American E&P companies. Companies that only operated for part of the 2000 to 2012 period were removed.

	Year shift	Data source
Canadian rig count	+1	Baker Hughes
Canadian offshore rig count	+1	Baker Hughes
Newfoundland geophyisical programs	0	CNLOPB.ca
Newfoundland well count	+1	CNLOPB.ca
Global offshore rig count	+1	Baker Hughes
Comparable company revenues	0	Capital IQ
North American E&P capex	+1	Capital IQ
Spot price	-1	Bloomberg

105. In order to evaluate the potential relationship between normalized revenues and the shifted metrics, we calculated the R-squared value[3] looking at normalized revenues and each of the shifted metrics between 2000 and 2012, the last year for which we have the Board Data.

106. The observed R-squared for each of the eight shifted indicators compared to both normalized revenues in Canadian dollars and normalized revenues in U.S. dollars is presented in the following table:

	R-squared	
	Normalized Revenues	
	in CAD	*in USD*
Canadian rig count	0.34	0.13
Canadian offshore rig count	0.17	0.02
Newfoundland geophyisical programs	0.16	0.01
Newfoundland well count	0.36	0.10
Global offshore rig count	0.31	0.50
Comparable company revenues	0.38	0.06
North American E&P capex	0.10	0.02
Spot price	0.40	0.07

107. We noted that the statistically strongest predictor of normalized revenues in a given year was the following year's annual global offshore rig count when compared to normalized U.S. dollar revenues; here, we noted an R-squared value of 0.5. We performed our illustrative extension of normalized revenues by applying the annual change in offshore rig count to U.S. dollar normalized revenues, beginning with normalized revenues in 2012 and extending to our Valuation Dates. We then converted each year's extended normalized revenues to Canadian dollars. This illustrative extension provided additional data points that we considered in our selection of maintainable revenues.

108. For our June 30, 2022 analysis, we also reviewed forward-looking data as of 2022. We noted generally an increase in expected activity in the near-term which may eventually level off by the mid-2020s and decline by the end of the decade.

109. For our November 30, 2017 analysis, we considered the global industry outlook, which considered various factors such as the supply of rigs, movement of commodity pricing in the months leading up to the Valuation Date, and E&P companies' capital deployment trends as well as total industry growth expectations.

[3] R-squared measures the proportion of variation of a dependent variable (in this case, normalized revenues) that is explained by an independent variable (in this case, the shifted metrics) in a regression model. R-squared values fall between 0 and 1; the closer the value is to 1, the stronger the statistical fit. In other words, an R-squared value of 0.9 indicates that a dependent variable is 90% explained by the independent variable. An R-squared of 0.3 indicates that a dependent variable is 30% explained by the independent variable.

Income Approach – Capitalized Cash Flow

110. Considering normalized revenues, illustrated extended revenues, and the forward-looking data points at the Valuation Dates, we selected maintainable revenues ranging as follows:

110.1. At November 30, 2017, we selected maintainable revenues of [redacted] to [redacted] as detailed at Schedule B2.1; and

110.2. At June 30, 2022, we selected maintainable revenues ranging from [redacted] to [redacted] as detailed at Schedule C2.1.

Direct Expenses

111. We calculated a normalized level of direct expenses as a percentage of revenues utilizing the average of actual direct expenses as a percentage of normalized revenues from 2000 to 2008, based on information from Mr. Paul Einarsson's Witness Statement.

112. Our two normalization adjustments relate to data that had already been shot and acquired by GSI. We understand from Mr. Paul Einarsson's Witness Statement that had the aforementioned revenue normalizations occurred in GSI's normal course of business, it would not have incurred additional costs. Put another way, had GSI received license fees for the Disclosed Data in the normal course of business, as contemplated in our revenue normalization, and had it been able to successfully bill and collect unpaid revenues from clients under contract, it would not have incurred any additional expense.

113. We also understand from Mr. Paul Einarsson's Witness Statement that after 2008, GSI's actual activities were significantly reduced, decreasing the relevance of figures after this year; accordingly, we did not consider the ratio of actual expenses to normalized revenues after 2008 as representative of a reasonable level of expense in the But-for Scenario.

114. We calculated average actual direct expenses as a percentage of normalized revenues of [redacted] as set out in Schedules B2.2 and C2.2.

G&A

115. Next, we determined an appropriate level of G&A to reflect the corporate overhead structure required to support maintainable revenues. We understand based on Mr. Paul Einarsson's Witness Statement that the 2006 to 2008 period, which represented GSI's highest years of G&A expenses, is an appropriate starting point to determine a normalized level of G&A.

116. We understand that as GSI is a private corporation and its executives are shareholders (or related to shareholders), Mr. Davey Einarsson, Mr. Paul Einarsson, and Mr. Russell Einarsson were paid amounts that often differed from a market rate of compensation (i.e., an amount that an unrelated, non-shareholder executive would command). Accordingly, we adjusted historical G&A over the 2006 to 2008 period to reflect a market level of compensation for the roles fulfilled by these three individuals. We note that Mr. Paul Einarsson is the Company's Chairman and had fulfilled the role of Chief Operating Officer until 2017 and Mr. Russell Einarsson was Vice President, Marketing until 2013; we understand from his Witness Statement and from the Witness Statement of Mr. Russell Einarsson that these two individuals left their roles

because the Company was not able to pay them and in the But-for Scenario, they would have remained in their respective roles. Actual compensation amounts included in G&A were obtained from Mr. Paul Einarsson's Witness Statement.

117. See Schedules B2.3 and C2.3 for details.

Maintainable EBITDA

118. As set out in Schedules B2 and C2, we applied the normalized level of direct expenses and normalized G&A to derive a maintainable EBITDA range.

119. We compared GSI's maintainable EBITDA margins [redacted] to those of guideline public companies and noted that although they fell within the range, they were higher than all but one company, Pulse Seismic, at the Valuation Dates after normalizing those companies' trailing-twelve-month EBITDA in cases where data-shooting costs were capitalized (GSI expenses its costs). We understand based on Mr. Paul Einarsson's Witness Statement that there are multiple reasons why GSI would have been able to earn higher margins in the But-for Scenario, specifically:

119.1. GSI's business model was generally focussed on the acquisition and licensing of non-exclusive data to multiple clients, allowing them to obtain license fees from multiple customers.

119.2. We understand that Pulse Seismic, which had normalized EBITDA margins of 85.1% and 84.0% at November 30, 2017 and June 30, 2022, respectively, is the most similar company to GSI in terms of its operating model. We understand that both Pulse Seismic and GSI are primarily providers of non-exclusive data to multiple customers.

119.3. GSI had structured its client contracts such that there were multiple "trigger points" upon which additional license fees would become due to GSI, including upon a client's new membership in exploration groups. We understand membership in an exploration group as a trigger point for additional license fees was unique in the industry.

119.4. As a private company, GSI has a generally has a lower overhead burden than the guideline public companies.

Capitalized Cash Flow

120. To arrive at estimated maintainable discretionary cash flow, we deducted income taxes as well as sustaining capital expenditures, net of the present value of the tax shield.

Income Approach – Capitalized Cash Flow

121. Sustaining capital expenditures were assumed to be equal to [redacted] of revenues based on Mr. Paul Einarsson's Witness Statement.

122. The combined federal and provincial income tax rate was calculated by giving consideration to the tax rates enacted at each of the two Valuation Dates with provincial weighting derived from GSI's corporate income tax returns for the years ended 2006 to 2008.

Capitalization Rate

123. Our selection of appropriate capitalization rates to apply to maintainable discretionary cash flow was dependent upon a number of factors, as set out below:

    123.1. The selected level of maintainable discretionary cash flow;

    123.2. General economic, industry condition at or around the Valuation Dates; and

    123.3. Future potential sources of growth in the market.

124. At November 30, 2017, we selected discount rates ranging from [redacted] and at June 30, 2022, we selected discount rates ranging from [redacted]. Further details on our selected discount rates are summarized in Appendix 4 and detailed in Schedules B3 and C3.

125. A long-term terminal growth rate of 2.0%[4] was subtracted to conclude on a range of capitalization rates.

Enterprise Value

126. Using the CCF method, we concluded that GSI's enterprise value was in the following range:

    126.1. [redacted] at November 30, 2017 as detailed in Schedule B1; and

    126.2. [redacted] at June 30, 2022 as detailed in Schedule C1.

Tests of Reasonableness

127. As a test of reasonableness of our Enterprise Value conclusion, we employed the market approach, comparing certain implied valuation metrics to public data. We have utilized our own analysis in selecting somewhat comparable companies and somewhat comparable transactions, as well as certain companies and transactions that were provided by GSI management and Counsel. The metrics we observed at November 30, 2017 and June 30, 2022 are as follows:

    127.1. EV/Normalized TTM EBITDA; and

    127.2. EV/forward EBITDA.

128. As per discussions with GSI management, we understand that industry standard is to capitalize certain expenses related to the retrieval of seismic data. Furthermore, we understand that GSI does not employ this policy and instead expenses these costs through the income statement.

[4] Consistent with the Bank of Canada's target inflation rate.

Income Approach – Capitalized Cash Flow

129. In order to observe our selected somewhat comparable companies on the same basis as GSI, we have made adjustments to the EBITDA figures of our selected somewhat comparable companies in which we have subtracted capitalized costs related to the retrieval of new seismic data.

130. First, we identified capital expenditures relating to seismic data retrieval on a TTM basis, at or closely preceding the Valuation Dates, for each of our selected somewhat comparable public companies. We then subtracted these values from TTM EBITDA to arrive at a "Normalized TTM EBITDA" figure.

131. Our calculated Normalized TTM EBITDA is utilized in our calculation of "EV/Normalized EBITDA" on Schedules B4 and C4.

132. We note that we have not made this adjustment for our selected precedent transactions. The majority of the target companies were private at the respective acquisition dates and as such, the required data was not available to make the appropriate adjustment. As such, the EV/TTM EBITDA multiples may be slightly understated in relation to GSI's multiple.

EBITDA Multiples

November 30, 2017

133. At November 30, 2017, based on the conclusion of the CCF method we noted an implied EBITDA multiple on the basis of maintainable EBITDA ranging [redacted] for GSI. Multiples of somewhat comparable public companies ranged between [redacted] on the basis of normalized EBITDA. GSI's implied EBITDA multiple range falls between the [redacted] of the observed multiples. Given GSI's operational focus, we consider a [redacted]

134. The EBITDA multiples of the somewhat comparable transactions ranged from [redacted] with a median of [redacted]. GSI's implied EBITDA multiples straddled [redacted] of the observed transaction multiples; however, we noted that many of the transactions [redacted] We view these transactions to be somewhat less comparable.

June 30, 2022

135. At June 30, 2022, based on the conclusion of the CCF method we noted an implied EBITDA multiple on the basis of maintainable EBITDA ranging from [redacted] Multiples of somewhat comparable public companies ranged [redacted] on the basis of normalized EBITDA. GSI's implied multiple range falls between [redacted] of the observed multiples. Since the COVID-19 pandemic in 2020, multiples within the oil and gas industry, more specifically, the geophysical, mapping and surveying industry have generally decreased. We consider GSI's multiple [redacted] in relation to the observed multiples and [redacted] GSI's implied multiples are [redacted] with market movement.

136. The EBITDA multiples of the somewhat comparable transactions ranged [redacted] Given the limited number of data points and the fact that there were [redacted] post-2020 (i.e., the beginning of the global COVID-19 pandemic), we place limited emphasis on these multiples.

Summary of Value

FMV to Messrs. Einarsson

137. FMV to Messrs. Einarsson represents the value of GSI that would be attributed to Mr. Paul Einarsson and Mr. Davey Einarsson as shareholders of the Company as well as the value of any related party debt owed to Messrs. Einarsson. To arrive at the FMV to Messrs. Einarsson, we deducted an assumed level of [redacted] based on Mr. Paul Einarsson's Witness Statement as well as related-party debt from individuals other than Mr. Paul Einarsson, Mr. Davey Einarsson, and Mr. Russell Einarsson. At November 30, 2017, we concluded on a FMV to Messrs. Einarsson ranging [redacted] and at June 30, 2022, we concluded on a range of [redacted]. See Schedule A1 for details.

FMV to Shareholders

138. FMV to shareholders is equal to FMV to Messrs. Einarsson minus the amount owed by GSI to Mr. Russell Einarsson, who is not a shareholder of the Company. After deducting the loan due to a shareholder of an affiliate, we concluded that FMV to shareholders (Mr. Paul Einarsson and Mr. Davey Einarsson) ranged between [redacted] at November 30, 2017 and between [redacted] at June 30, 2022. See Schedule A1 for details.

FMV of Equity

139. Finally, after deducting amounts due to the shareholders, we concluded on an equity value of GSI of [redacted] at November 30, 2017 and an equity value of [redacted] at June 30, 2022. See Schedule A1 for details.

Conclusion

140. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, the fair market values in a But-for Scenario of GSI at the Valuation Dates are summarized in the table below.

141. We note that a valuation is not a precise science and the conclusions arrived at, in many cases, will of necessity, be subjective and dependent on the exercise of individual judgement. For purposes of the Report, we have expressed our conclusions of value as falling within a likely range.

Summary of Value

(In $CAD 000's)

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

Summary of Losses

Loss of Value

142. We understand that GSI has [redacted] at both Valuation Dates and accordingly, we have been instructed to assume that GSI's actual values (i.e., not contemplating a But-for Scenario) were [redacted] at both Valuation Dates. Accordingly, the entirety of GSI's value in a But-for Scenario is equal to the loss suffered by GSI's shareholders related to its value.

Loss of Amounts Lent to GSI

143. These losses reflect related party or shareholder loans made by Mr. Paul Einarsson, Mr. Davey Einarsson, and Mr. Russell Einarsson that are not recoverable. These losses are not included in FMV of equity and should only be examined in conjunction with FMV of equity; they are already included in FMV to Messrs. Einarsson and enterprise value and the majority of these amounts is included in FMV to shareholders.

144. Based on our instruction that GSI has a value of $nil at the two Valuation Dates and was not actively engaged in income-earning activities, we understand that the full balance of the loans from Messrs. Einarsson are not recoverable.

145. The amounts due to each individual are based on information provided by Mr. Paul Einarsson from GSI's accounting records. We have been instructed by Counsel to assume that the loss at June 30, 2022 would be equal to the lost loan at November 30, 2017 plus accrued judgment interest (as calculated as Schedules A1.5, A1.6, and A1.7).

Loss on Loan from Shareholder of Affiliate

(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,382	1,382
Accrued interest up to June 30, 2022	130	276
Total loss at June 30, 2022	1,511	1,658

Loss of Shareholder's Loan - Mr. Davey Einarsson

(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	2,391	2,391
Accrued interest up to June 30, 2022	224	478
Total loss at June 30, 2022	2,616	2,870

Loss of Shareholder's Loan - Mr. Paul Einarsson

(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,478	1,478
Accrued interest up to June 30, 2022	139	296
Total loss at June 30, 2022	1,616	1,773

Loss of Employment Earnings

146. We have been instructed to calculate the present value of the lost future employment earnings for Messrs. Einarsson as at April 18, 2016.

147. The market-based compensation data we used for our G&A normalization was used as the basis for this calculation. We understand from Mr. Paul Einarsson's Witness Statement that in the But-for Scenario, he would have remained as GSI's Chief Operating Officer and Mr. Russell Einarsson would have remained in his role as Vice President, Marketing. We have included compensation for these roles accordingly. These

figures were escalated at an inflationary rate; between 2016 and 2022, we used actual historical inflation for Alberta. After 2022, an inflation rate of 2.0% was utilized.

148. We have been instructed by Counsel to make the following assumptions:

148.1. Mr. Davey Einarsson would have retired in 2019;

148.2. Mr. Paul Einarsson and Mr. Russell Einarsson will retire at the age of 75, which translates to retirement dates in 2039 and 2040, respectively.

Summary of Losses

149. The stream of employment earnings was then discounted back to April 18, 2016 at the applicable risk-free rate and a judgmentally selected discount rate of 5%.

150. The present value of lost employment earnings is summarized in the following table. Refer to Schedule A1.8 for our calculations.

Lost Employment Earnings
(In $CAD 000's)

April 18, 2016	Low	High
[redacted]	[redacted]	[redacted]

Accrued Interest

151. We were also instructed to calculate accrued interest up to June 30, 2022 on all categories of loss occurring prior to June 30, 2022.

152. Losses on which we have calculated accrued interest include the following categories:

152.1. Equity value (midpoint) under the But-for Scenario;

152.2. Lost employment earnings for Messrs. Einarsson;

152.3. Lost related party loan from Mr. Russell Einarsson; and

152.4. Lost shareholder loans.

153. Interest was calculated on a compounding basis. Two interest rates were considered:

153.1. An assumed cost of borrowing, which was based on the average daily 20-year BBB Canadian corporate bond yield in each year; and

153.2. A risk-free rate, based on the average daily 20-year Canada Sovereign Strip yield in each year.

154. Our quantification of accrued interest is summarized in the following table and calculated at Schedules A1.1 to A1.7.

Accrued Interest
(In $CAD 000's)

	Low	High
Accrued interest on lost equity value	36,280	77,345
Accrued interest on loss of loan from shareholder of affiliate	130	276
Accrued interest on loss of shareholder's loan - Mr. Davey Einarsson	224	478
Accrued interest on loss of shareholder's loan - Mr. Paul Einarsson	139	296
Accrued interest on employment earnings - Mr. Davey Einarsson	111	236
Accrued interest on employment earnings - Mr. Paul Einarsson	179	380
Accrued interest on employment earnings - Mr. Russell Einarsson	101	215
Total accrued interest	37,163	79,226

Summary of Losses

155. With respect to quantifications of loss requested by Counsel, a summary of the results of those calculations is also presented in the following paragraphs and tables.

Equity Value

156. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the lost equity value of the Company at the Valuation Dates, our conclusions are summarized in the following table.

Lost Equity Value
(In $CAD 000's)

	Low	High
November 30, 2017		
Lost equity value	343,798	429,564
Accrued interest on lost equity value	36,280	77,345
Total	380,078	506,909
June 30, 2022		
Lost equity value	252,236	319,742

Loss on Loan from Shareholder of Affiliate

157. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss on loan from shareholder of affiliate at the Valuation Dates, our conclusions are summarized in the following table.

Loss on Loan from Shareholder of Affiliate
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,382	1,382
Accrued interest up to June 30, 2022	130	276
Total loss at June 30, 2022	1,511	1,658

Loss of Shareholder's Loan – Mr. Davey Einarsson

158. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of Mr. Davey Einarsson's shareholder loan at the Valuation Dates, our conclusions are summarized in the following table.

Loss of Shareholder's Loan - Mr. Davey Einarsson
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	2,391	2,391
Accrued interest up to June 30, 2022	224	478
Total loss at June 30, 2022	2,616	2,870

Loss of Shareholder's Loan – Mr. Paul Einarsson

159. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of Mr. Paul Einarsson's shareholder loan at the Valuation Dates, our conclusions are summarized in the following table.

Loss of Shareholder's Loan - Mr. Paul Einarsson
(In $CAD 000's)

	Low	High
Loss on loan at November 30, 2017	1,478	1,478
Accrued interest up to June 30, 2022	139	296
Total loss at June 30, 2022	1,616	1,773

Loss of Employment Earnings – Mr. Davey Einarsson

160. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Davey Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Davey Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	1,020	1,058
Accrued interest on loss	111	236
Total	1,130	1,294

Loss of Employment Earnings – Mr. Paul Einarsson

161. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Paul Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Paul Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	7,536	10,175
Accrued interest on loss	179	380
Total	7,715	10,555

Loss of Employment Earnings – Mr. Russell Einarsson

162. Based on the scope of our work, major assumptions, and the restrictions and qualifications set out in the balance of the Report, with respect to the loss of employment earnings for Mr. Russell Einarsson from April 18, 2016, our conclusions are summarized in the following table.

Loss of Employment Earnings - Mr. Russell Einarsson
(In $CAD 000's)

	Low	High
April 18, 2016		
Loss of earnings	4,462	6,141
Accrued interest on loss	101	215
Total	4,564	6,356

Appendices

Scope of our work

1. In the course of our valuation analysis, we relied upon financial and other information, including prospective financial information, obtained from GSI management, Counsel, and from various public, financial, and industry sources. Our conclusion is dependent on such information being complete and accurate in all material respects.
2. In preparing the Report, we relied on the following principal sources of information:
   - 2.1. The Notice of Arbitration, filed April 18, 2019, and the Government of Canada's corresponding Statement of Defence, dated June 9, 2022;
   - 2.2. Mr. Paul Einarsson's Witness Statement (CWS-06) as well as the witness statement of Mr. Russell Einarsson dated August 4, 2022 (CWS-05);
   - 2.3. GSI's various audited and unaudited financial statements for the years ended December 31, 1994 to 2021, for the 11 months ended November 30, 2017, and for the six months ended June 30, 2022 (C-109);
   - 2.4. GSI's corporate tax returns for the years ended December 31, 2006 to 2008 (C-110);
   - 2.5. The Board Data (C-111);
   - 2.6. The Unpaid Invoice Listing (C-112);
   - 2.7. Outstanding loan balances at November 30, 2017 and at June 30, 2022 for certain related party and shareholder loans (C-113);
   - 2.8. Research related to historical foreign exchange rates (C-114), interest rates (C-115), and inflation (C-116);
   - 2.9. Research on historical industry growth indicators including historical rig count data, historical oil spot price data, information on Newfoundland offshore oil and gas activity, and information on E&P capital expenditures (C-117);
   - 2.10. Research on forward-looking industry growth indicators and metrics (C-118);
   - 2.11. Certain publicly available information regarding guideline public companies (Schedules B3, B4, B5, C3, C4, C5, and Exhibit C-119) and precedent transactions (Schedules B6, B7, C6, C7, and Exhibit C-120);
   - 2.12. Market executive compensation data from ERI's Salary Assessor (C-121);
   - 2.13. Research on the geophysical, mapping and surveying industry (C-122);
   - 2.14. Research on general economic conditions at the Valuation Dates (C-123);
   - 2.15. Publicly available information regarding the Company and its history; and
   - 2.16. Discussions with Mr. Paul Einarsson and instructions from Counsel.

Scope Limitation

3. Due to the nature of this mandate, the sweeping and pervasive impact of the alleged wrongful actions of the Government of Canada on GSI's business, and the passage of time between the occurrence of these alleged wrongful actions and our Valuation Dates, the validity of the assumptions forming the basis of the But-for Scenario cannot be fully corroborated. We have relied on these assumptions, which have been identified in this Report as assumptions taken from Mr. Paul Einarsson's witness statement, and for the purposes of this Report, treated them as facts.

Restrictions and Qualifications

4. The Report is not to be used for any purpose other than that stated and it is not intended for general circulation, nor is it to be published in whole or in part, without our prior written consent. We do not accept responsibility for any losses arising from unauthorized or improper use of the Report.
5. Under the Practice Standards of the CBV Institute, there are three types of valuation reports that can be issued by a Chartered Business Valuator ("CBV"), being a Comprehensive Valuation Report, an Estimate Valuation Report or a Calculation Valuation Report. The conclusions reported therein differ by the level of assurance provided and the extent of analysis, investigation and corroboration performed by the CBV.
6. The valuation conclusion contained within this Report is an Estimate Valuation Report. As such, the scope of review is inherently limited by the nature of the valuation report provided and the conclusions expressed may be different than the conclusions resulting under the scope of work in support of a Comprehensive or a Calculation Valuation Report.
7. We reserve the right (but will be under no obligation) to make revisions to the Report should we be made aware of facts existing at the Valuation Dates, which were not known to us when we prepared the Report.
8. We accept no responsibility or liability for any losses occasioned by any party as a result of our reliance on the financial and non-financial information that was provided to us or found in the public domain.
9. We relied upon the completeness, accuracy and fair presentation of all the financial information, data, advice, opinion or representations obtained from public sources and GSI management, which is detailed under the Scope of our Work section (collectively, the "Information"). We have not conducted any audit or review of the financial affairs of GSI, nor have we sought external verification of the information provided to us by the aforementioned sources or that which was extracted from public sources. We accept no responsibility or liability for any losses occasioned by any party as a result of our reliance on the financial and non-financial information that was provided to us or found in the public domain.
10. We relied, in part, upon representations made by GSI management which, among other things, provide that:
    - 10.1. The Information does not omit any material fact in respect of GSI; and
    - 10.2. GSI management is are not aware of any material changes in the Information or GSI, which would have, or which would reasonably be expected to have, a material effect on our conclusions.

Restrictions and Qualifications

11. In accordance with the terms of our engagement, the Report is at two specific points in time, the Valuation Dates. It must be recognized that FMV and fair value changes from time to time, not only as a result of internal factors, but also because of external factors such as changes in the economy, competition and changes in interest rates.
12. The Report must be considered in its entirety by the reader, as selecting and relying on only specific portions of the analyses or factors considered by us, without considering all factors and analyses together, could create a misleading view of the processes underlying this valuation and the conclusions there from. The preparation of a valuation is a complex process and it is not appropriate to extract partial analyses or make summary descriptions. Any attempt to do so could lead to undue emphasis on a particular factor or analysis.
13. The Report is not intended or written to be used, and it cannot be used by any taxpayer, for the purpose of avoiding tax penalties that may be imposed on the taxpayer or to support the promotion or marketing of any transactions or the matters addressed in the Report.
14. Nothing contained herein is to be construed as a legal interpretation, an opinion on any contract or document, or a recommendation to invest or divest.
15. This Report was prepared in conformity with the Practice Standards of the CBV Institute.
16. The individuals that prepared the Report did so to the best of their knowledge, acting independently and objectively.
17. Our compensation is not contingent on any action or event resulting from the use of the Report.
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    18.1. The reader of this Report understands that the work performed by PwC was performed in accordance with instructions provided by BLG and was performed exclusively for the purpose stated in our May 20, 2022 engagement letter.

    18.2. The reader of this Report acknowledges that this Report was prepared at the direction of BLG and may not include all procedures deemed necessary for the purposes of the reader.

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Valuation Approaches

There are three generally-accepted approaches for valuing a business, business ownership interest or security: Income Approach, Asset Approach, and Market Approach. In certain cases, a combination of two or three of the foregoing approaches may be appropriate.

Income Approach

20. The Income Approach is a general way of determining a value indication of a business (or its underlying assets), using one or more methods wherein a value is determined by capitalizing or discounting anticipated future benefits. This approach contemplates the continuation of the business operations, if the business is a "going concern".

21. The Income Approach is adopted where the business being valued is earning a fair return on its capital employed and the notional purchaser wishes to acquire the future indicated earnings/cash flow stream generated by the enterprise. That is, the earnings value of a going concern is based upon the yield to an investor, at the desired rate of return on the investment, having regard to a number of "internal" and "external" factors relating to the future prospects of the business, the rates of return on alternative investments, the degree of risk involved, the liquidity of the investment, etc.

22. Anticipated benefits are converted to value using procedures that consider the expected growth and timing, the risk profile of the benefits stream and the time value of money. The conversion of the benefits stream to value normally requires the determination of a capitalization rate or discount rate (rate of return). In determining the appropriate rate, consideration is given to such factors as interest rates, rates of return anticipated by investors on alternative investments, the risk characteristics of the anticipated benefits of the subject entity, etc. Typically, the rate of return or discount rate used is consistent with the anticipated benefits.

23. The more common methodologies, or techniques, applied under the Income Approach are:

    23.1. Discounting the future stream of cash flows, applying the Discounted Cash Flow ("DCF") Method; and

    23.2. Capitalizing operating cash flow or earnings, applying either the Capitalized Earnings Method or the Capitalized Cash Flow Method respectively or variations thereof such as capitalized EBITDA or other earn approaches.

Market Approach

24. The Market Approach to valuation is a general way of determining a value indication of a business or an equity interest therein using one or more methods that compare the subject entity to similar businesses, business ownership interests and securities (investments) that have been sold. Examples of methods applied under this approach include, as appropriate:

    24.1. The "Guideline Public Company Method",

    24.2. The "Precedent Transaction Method"; and

    24.3. Analyses of prior transactions of ownership interests in the subject entity.

Valuation Approaches

There are three generally-accepted approaches for valuing a business, business ownership interest or security: Income Approach, Asset Approach, and Market Approach. In certain cases, a combination of two or three of the foregoing approaches may be appropriate.

Asset Approach

25. The Asset Approach is adopted where either:

    25.1. Liquidation is contemplated because the business is not viable as an ongoing operation;

    25.2. The nature of the business is such that asset values constitute the prime determinant of corporate worth (e.g., vacant land, a portfolio of real estate, marketable securities or investment holding company, etc.); or

    25.3. There are no indicated earnings/cash flows to be capitalized.

26. If consideration of all relevant facts establishes that the Asset Approach is applicable, the method to be employed will be either a going-concern scenario ("Adjusted Net Asset Method") or a liquidation scenario (on either a forced or an orderly basis), depending on the facts.

27. In applying the Adjusted Net Asset Method, each asset and liability appearing on the balance sheet is adjusted to its respective FMV as of the valuation date, on a going-concern (as opposed to a liquidation) basis.

Weighted Average Cost of Capital

The WACC is an overall required rate of return, which takes into account the required rate of return on all forms of invested capital (i.e. debt and equity capital). It is the rate of return indicative of the investment risk inherent in the ownership of the entire business enterprise. The following is a general discussion of the approach used in our derivation of the WACC.

General formula for calculating WACC:

WACC	=	Kd * (d%) + Ke * (e%) where:
K_d	=	After-tax rate of return on debt capital;
d%	=	Debt capital as a percentage of the sum of the debt, preferred and common equity capital ("Total Invested Capital");
Ke	=	Rate of return on common equity capital; and
e%	=	Common equity capital as a percentage of the Total Invested Capital.

Debt/Equity Mix

28. In arriving at an appropriate debt/equity mix to use in our WACC calculations, we considered a variety of factors, which include:

    28.1. The observed debt/ equity ratios of guideline public companies, as appropriate; and

    28.2. A high level consideration of GSI and assets available for security purposes, as well as earnings levels available to support indicated debt levels.

29. Based on the above noted factors, we have selected a debt to total capital ratio of 40.24% at November 30, 2017 and 34.34% at June 30, 2022 as being appropriate for GSI.

Rate of Return on Debt Capital (K_d)

30. The rate of return on debt capital is the rate a prudent investor would require on interest-bearing debt. We utilized the yields based on 20-year Canada corporate bonds with a minimum credit rating of BBB. This rating was selected as being investment grade and in the range of ratings for those companies considered in our comparables analysis.

31. Since the interest on debt capital is deductible for income tax purposes, we used the after-tax interest rate in our calculation. The effective income tax rate used in this analysis was 27.5% at November 30, 2017 and 25.5% at June 30, 2022, which is the weighted average tax rates for GSI.

K	=	**i * (1 - t) where:**
K_d	=	**After-tax rate of return on debt capital;**
i	=	**Pre-tax rate of return on debt capital; and**
t	=	**Effective combined income tax rate.**

Weighted Average Cost of Capital

The WACC is an overall required rate of return, which takes into account the required rate of return on all forms of invested capital (i.e. debt and equity capital). It is the rate of return indicative of the investment risk inherent in the ownership of the entire business enterprise. The following is a general discussion of the approach used in our derivation of the WACC.

Rate of Return on Equity (K_e)

32. We used the Capital Asset Pricing Model ("CAPM") to determine the required return on equity for GSI. The CAPM estimates the rate of return on common equity as the risk-free rate of return on Canadian government bonds, as at the Valuation Date, plus a market risk premium expected over the risk-free rate of return, multiplied by the "beta" for the stock. This estimate is, adjusted with a premium and, where appropriate, a company-specific risk premium.

33. Beta reflects the sensitivity of the return on a security to the return on the market index. This sensitivity is referred to as systematic risk.

Ke	=	Rf + (β x Rp) + Rs + A where:
Ke	=	Rate of return on equity capital;
Rf	=	Risk free rate of return;
β	=	Beta or systematic risk for this type of equity investment;
Rp	=	Market risk premium; The expected return on a broad portfolio of stocks in the market less the risk free rate;
Rs	=	The small stock premium, Rs, is defined as the difference in total returns between large stocks and small stocks; and
α	=	Company-specific adjustments.

Risk-free Rate (Rf)

34. In our analysis, we have utilized the 20-year Canada government bond yield as an indicator of the risk-free rate of return.

Beta (β)

35. The selected beta was calculated in reference to the observed betas for those companies listed in Schedules B3 and C3. We note that the observed betas were un-levered and then re-levered based on the selected debt/total capital ratios discussed above.

Equity Risk Premium (Rp)

36. Quantification of the market risk premium has been the subject of significant research by security analysts. Based upon our research and analysis as well as publicly available data regarding equity risk premiums in Canada and the U.S., we consider the average market premium for equity to be approximately 5.00% at November 30, 2017 and 5.50% at June 30, 2022.

Size Premium (Rs)

37. The size premium was selected to be the tenth decile size premium noted in the Size Premium Study from the Duff & Phelps Risk Premium Report for 2017 and 2022.

Weighted Average Cost of Capital

The WACC is an overall required rate of return, which takes into account the required rate of return on all forms of invested capital (i.e. debt and equity capital). It is the rate of return indicative of the investment risk inherent in the ownership of the entire business enterprise. The following is a general discussion of the approach used in our derivation of the WACC.

Company-Specific Premium

38. Other risk adjustments may be appropriate to consider, including whether the subject company's risk characteristics are greater or smaller than the typical risk characteristics of the comparable companies. Adjustments may be based on an analysis of factors such as:

    38.1. Industry risk;

    38.2. Volatility of returns;

    38.3. Leverage;

    38.4. Other company-specific factors, including risks associated with achieving forecast operating results.

39. We considered the following specific risk factors, which impact GSI:

    39.1. GSI's collection of shelf data and its data shooting activities have been primarily conducted off the coast of Canada. To the extent that GSI would have to change its focus to other areas of the global offshore oil and gas exploration market in order to maintain revenues, there is uncertainty. We understand that prior to the sell off its assets, GSI had begun doing more international exploration;

    39.2. In the But-for Scenario, it is our understanding that GSI would continue to maintain a strong reputation with industry players as well as its library of Canadian offshore seismic data;

    39.3. Risks and uncertainty associated with the achievability of maintainable revenues, gross margins, the level of G&A incurred by the Company, and capital expenditures.

40. Based upon a review of these factors, we believe that a company-specific risk premium adjustment is appropriate in calculating the return on equity.

Discount Rate Conclusion

41. Based on the results of the foregoing analysis, we have selected the discount rate to range from [redacted] at November 30, 2017 and range from [redacted] at June 30, 2022.

Economic Outlook on or around November 30, 2017

42. The Canadian economy advanced by 3.7% on an annual basis in Q2 2017 with total annualized growth in 2017 expected to be 2.8%. Real GDP is expected to slow to 2.0% in 2018 and 1.5% in 2019 due to the effects of tighter monetary policy.
43. Consumer spending continues to surge across Canada with retail sales rising more than 5% in the Maritimes, Central Canada as well as BC and Alberta.
44. Job creation is beginning to pick up in the Western Provinces as well as Ontario, however, employment remains weak in Newfoundland and Labrador as major resource projects are completed. The rebound in employment is driven by technology-driven occupations while Alberta is experiencing a rebound in its oil and gas sector.
45. Although energy products dominate the gain in exports, other strengths include mining and machinery shipments from Quebec and Western Canada.
46. A number of cities such as Halifax, Winnipeg and Ottawa are experiencing moderate home prices gains of 3-6% to date in 2017. Housing starts continue to surprise on the upside as historically low interest rates have emboldened consumer expenditures in recent years. However, the withdrawal of monetary stimulus, combined with other regulatory tightening is expected to instill increasing consumer caution through 2019.
47. Alberta and British Columbia are forecast to lead the nation in economic growth in 2017. In 2018 and 2019, as consumption and housing cool, projected provincial growth is more balanced, with a greater reliance on exports and business investment.
48. The table below highlights key Canadian economic indicators on or about November 30, 2017:

Particulars (Annual % Changes, unless mentioned)	**2015A**	**2016A**	**2017E**	**Q4'16**	**Q1'17**	**Q2'17**	**Q3'17**
Real GDP	0.9	1.5	2.8	2.7	3.7	3.7	2.1
Consumer Spending	1.9	2.4	3.2	3.0	4.3	4.0	1.8
Unemployment (%)	6.9	7.0	6.5	6.9	6.7	6.5	6.5
Consumer Price Index	1.1	1.4	1.7	1.4	1.9	1.3	1.5
Overnight Rate (%)	0.5	0.5	0.95	0.5	0.5	0.5	0.75
10-Year Bond	1.39	1.72	2.07	1.72	1.62	1.76	1.97
Housing Starts (000's)	194	198	205	197	223	207	204
Exchange Rate (Per US$)	1.38	1.34	1.27	1.34	1.33	1.30	1.27

Economic Outlook on or around November 30, 2017

49. Gross Domestic Product ("GDP"): The Canadian economy advanced by 3.7% on an annual basis in Q2 2022, consistent with prior quarter growth of 3.7% in Q1. The gains reflected supportive financial conditions, rebuilding from last year's wildfires, improved global demand, confidence and job markets, as well as recovery in the energy industry. The economy was expected to continue to strengthen, with GDP growth forecast to rise by 2.8% in 2017 before easing to 2.0% in 2018 and 1.5% in 2019.

50. Inflation: Consumer prices rose by 0.2% in July and the year-over-year rate was up by 0.2% to 1.2%, one of the lowest inflation rates in the world despite robust economic growth, and also below the Bank of Canada's 2.0% inflation target. The central bank believes that the recent inflationary weakness is temporary, with recent economic strength likely to translate into higher inflation next year.

51. Bank Rate: On July 12, 2017, the Bank of Canada raised the overnight rate to 0.75%, up from 0.5%, which had been held steady since July 2015. The Bank of Canada acknowledged "recent softness in inflation but judges this to be temporary." Economists expected the Bank of Canada to raise the overnight rate to 0.95% by the end of 2017, and to 1.5% by the end of 2018.

52. Employment: The Canadian economy generated 10,900 jobs in July, with full-time jobs up 35,100, and part-time jobs down 24,300. Unemployment eased from 6.5% in June to 6.3% in July, the lowest level since 2008. The unemployment rate was expected to continue to ease from 7.0% in 2016 to 6.5% and 6.4% in 2017 and 2018, respectively.

53. Consumer Confidence: The Conference Board of Canada's Index of Consumer Confidence rose 8.1 points to 121.7 in August. The increase reflected improved optimism about future finances and employment prospects. Confidence in Alberta had been trending upward over the past year, but remained below the levels reached when oil prices were higher.

54. Business Confidence: The Canadian Federation of Independent Business' Business Barometer Index decreased by 0.9 points to 59.8 in August, the third consecutive monthly decline from 66.0 in May. (On a scale between 0 and 100, an index above 50.0 indicates owners expecting their business' performance to be stronger in the next year outnumber those expecting weaker performance). Although confidence improved in the oil-producing provinces (Newfoundland & Labrador, Saskatchewan, and Alberta), confidence remained the lowest in these provinces. In terms of hiring plans, 16.0% of businesses planned to add full-time staff and 13.0% planned to cut staff in the short-term.

55. Exchange Rates: The Canadian dollar was up 7.0% in 2017, rising to over US$0.79 US, reflecting higher oil prices and market response to the central bank's rate increase, as well as a weakening in the U.S. dollar in response to lower expectations relating to the achievement of U.S. fiscal stimulus and further tightening by the Federal Reserve.

Economic Outlook on or around November 30, 2017

56. Housing: The Canadian housing industry remained robust despite substantial changes in provincial and federal government housing policy since the autumn of 2016. Housing starts rose to 4.4% on a monthly basis to 222,300 annualized units in July, the second strongest gain in the last twelve months. However, existing home sales declined 2.1% in July, the fourth consecutive monthly decline, bringing sales to 15.3% below the peak reached in March 2017. Looking ahead, economists anticipate a slowing pace of construction in response to weaker existing house sales and higher mortgage rates. Housing starts were forecast to rise to 205,000 in 2017 and ease to 185,000 units in 2018.

Sources

- Bloomberg
- BMO Capital Markets
- CIBC Capital Markets
- Scotiabank Economics
- TD Economics
- The Conference Board of Canada
- Canadian Federation of Independent Business
- EUI Viewswire

Economic Outlook on or around June 30, 2022

57. The Canadian economy is expected to grow at 3.7% in 2022 after growing by 4.5% in 2021, as interest rates and inflation increase and momentum in the U.S. slows.

58. The British Columbia economy is expected to slowdown in 2022 and 2023 due mostly to decreasing demand in the housing market as a result of higher interest rates. Furthermore, demand for lumber products is expected to decrease as a direct result of a slowing U.S. economy.

59. Alberta's economy growth rate is estimated to improve in 2022 due to strong commodity prices in the energy and agriculture sectors. In 2023, economic growth in Alberta is expected to slow due to a softening of global demand for energy and agriculture products.

60. Economic growth in Quebec saw a strong start to the year as GDP figures exceeded estimates during Q1 2022. However, the Quebec economy is estimated to experience a significant slowdown in the second half of 2022 as rising interest rates and elevated inflation is expected to negatively affect household and business spending.

61. 2022 started off slow for the Ontario economy as it was one of the provinces that was most severely affected by the COVID-19 Omicron variant. However, the opening of the economy in the second quarter resulted in employment growth that outpaced the nation. In the second half of 2022, household spending as well as the housing market are expected to be negatively effected by higher interest rates and declining asset values.

62. Economies in the Maritimes are expected to be most effected by rising interest rates and elevated inflation. This is due to an above average portion of household spending allocated to food and energy.

63. The table below highlights key Canadian economic indicators on or about June 30, 2022:

Particulars (Annual % Changes, unless mentioned)	2020A	2021A	2022E	Q4'21	Q1'22	Q2'22	Q3'22
Real GDP	(5.2)	4.5	3.7	6.6	3.1	4.4	3.0
Consumer Spending	(6.2)	5.0	4.7	1.8	3.4	3.7	3.2
Unemployment (%)	9.6	7.4	5.3	6.3	5.8	5.2	5.1
Consumer Price Index	0.7	4.7	7.9	4.7	5.8	7.1	7.2
Overnight Rate (%)	0.25	0.25	2.05	0.25	0.50	1.25	1.75
10-Year Bond	0.68	1.45	2.65	1.43	2.41	2.53	2.60
Housing Starts (000's)	218	277	245	261	244	252	245
Exchange Rate (Per US$)	1.27	1.26	1.25	1.26	1.25	1.25	1.25

Economic Outlook on or around June 30, 2022

64. Gross Domestic Product ("GDP"): In Q2 2022, Canadian GDP expanded at an annualized rate of 4.4%, primarily due to increased business investment in inventories, non-residential structures, machinery and equipment, and household spending on services and semi-durable goods. The Bank of Canada had predicted a GDP growth rate of 4.0% for the second quarter of 2022.

65. Inflation: Statistics Canada's annual inflation rate for June rose to 8.1% per cent in June from 7.7% in May 2022, majorly driven by higher prices of gasoline. Per Statistics Canada, excluding gas prices, June's annual inflation number was 6.5%. Price increases remained broad-based with seven of eight major components rising by 3% or more.

66. Bank Rate: On June 1, 2022, The Bank of Canada increased its target for the overnight rate to 1.5%, with the Bank Rate at 1.75% and the deposit rate at 1.5%. The Bank plans to continue its policy of quantitative tightening. In this environment of rising inflation, the Bank plans to utilize aggressive monetary policy in order to return inflation to its target of 2%.

67. Employment: In June, the unemployment rate fell by 0.2 % to 4.9% as the number of people looking for work decreased. Compared with April, full-time employment was up by 0.8% while part-time employment was down by 3.6%. In June, total hours worked increased by 1.3%. Average hourly wages rose 5.2% on a year-over-year basis in June, up from 3.9% in May and 3.3% in April.

68. Consumer Confidence: The Bloomberg Nanos Canadian Confidence Index - a composite indicator derived from weekly surveys of Canadian households reached 48.3 in the mid week of June 2022, the lowest since July 2020. The decrease in consumer confidence is driven by rising cost of living.

69. Business Confidence: The Conference Board of Canada's Index of consumer confidence fell 4.5 points to 98.7 in June from 103.2 in May 2022. Consumers grew more pessimistic about the short-term outlook of business conditions, the labour market and financial prospects.

70. Exchange Rates: The USD/CAD rate on June 30, 2022 was 1.288, reflecting a decline of around 0.10% from the previous trading day. The Canadian currency is estimated to strengthen 0.4% to 1.26 per U.S. dollar over the next quarter and further to 1.23 over the next twelve months.

Economic Outlook on or around June 30, 2022

71. Housing: After reaching 277,000 in 2021, housing starts are forecast to decrease to 245,000 in 2022 with a further decrease in 2023 to 230,000. A slowing economy due to higher interest rates and elevated inflation is expected to negatively effect the housing market across Canada.

Sources

- Statistics Canada
- Canada Mortgage and Housing Corporation
- Conference Board of Canada
- Bank of Canada
- Bloomberg
- Reuters
- TD Economics
- Focus Economics

Industry Outlook – Geophysical Services Industry

Overview

72. The geophysical services industry gathers, interprets and maps geophysical data. Companies often specialize in locating and measuring subsurface resources such as oil, natural gas and minerals, but they may also conduct surveys for engineering purposes.
73. As a result, the industry's performance is dependent on demand for resource exploration from oil, natural gas and mining industries, which are largely dependent on movements in commodity prices.
74. Oil and gas companies make up the principal markets for geophysical industry services, accounting for an estimated 60.9% of industry revenue in 2017 and 48.5% in 2022.
75. The industry's dependence on volatile global energy markets is evident in its demonstrated swift growth in demand for geophysical services during post-recessionary periods. As commodity prices rose, so did demand for industry services.

Industry Terminology

76. Geophysical survey – A combination of the principles of geology and physics that are used to study the substrata of the Earth and its oceans. Used extensively in oil and gas exploration, mineral deposits and in archaeology.
77. Seismic survey – A form of geophysical survey that measures the properties of the Earth by seismic waves using magnetic, electric gravitational, thermal and elastic theories.

Marine Seismic Survey

78. Marine seismic surveys use sound energy to map geological structures under the seabed. Towed devices use compressed air to produce pulses of high-energy, low-frequency sound waves that travel through the water and can penetrate more than 6,000 meters into rock layers below the sea floor. These sound waves bounce back to the ocean surface where receivers, called hydrophones, record the strength and return time of each sound wave.
79. From this data, maps of the geology below the seabed are developed. Users of the retrieved marine seismic data are primarily oil and gas exploration and production companies who explore and extract resources in the offshore.
80. Various types of marine seismic surveys include:

    80.1. Two Dimensional ("2D") – Utilizes one sound source and one set of receivers to provide a general picture of the geological characteristics over a wide area;

    80.2. Three Dimensional ("3D") – A 3D survey is used to provide more detailed information about a smaller area. These surveys deploy multiple synchronized sound sources and hydrophones.

    80.3. Four Dimensional ("4D") – Similar to a 3D survey, with the added dimension of time.

Industry Outlook – Geophysical Services Industry

Outlook on or around November 30, 2017

81. The geophysical services industry is expected to substantially expand over the next 5 years due to rising demand for exploratory surveying as world energy prices rebound from the collapse in 2015 and 2016.

82. Since demand for industry services is largely predicated on demand from downstream oil, natural gas and mining industries, rising commodity prices will drive new exploration activity, especially in previously unexplored offshore areas.

83. Over the next 5 years, it is forecast that industry revenue will climb at an annualized rate of 5.0% to $1.5 billion, including growth of 7.0% in 2017.

84. It is noted that certain recent developments could have a potential impact on the outlook of the geophysical services industry. This includes the following:

    84.1. Demand growth driven by China and India;

    84.2. A fall in international rig count; and

    84.3. Downward pressure on global energy supplies.

85. The expected continuation of rapid growth among the world's developing economies, particularly China and India, will only further raise commodity prices and drive demand for industry services.

86. Furthermore, according to Baker Hughes' report of international oil and gas rig counts, total rig count has decreased 4 out of the last 10 prior months in 2017. The average year-to-date increase in monthly rig count amounts to a relatively flat 0.9%. This implies that oil and gas companies are cutting down on their capital spending which could have an impact on demand for geophysical services.

87. Lastly, downward pressure on global energy supplies is pushing the price of crude oil higher as evident in the rally in prices in September 2017 and October 2017.

88. The U.S. Energy Department has been sharply drawing down inventory since March 2017 with the U.S. Strategic Petroleum Reserve shrinking in 24 of the last 30 weeks preceding November 2017.

89. Additionally, there is expectations that the Organization of the Petroleum Exporting Countries ("OPEC") will expand their output-cut deal beyond March 2018. This is significant, in that supply from OPEC accounts for approximately 40% of global crude oil supply.

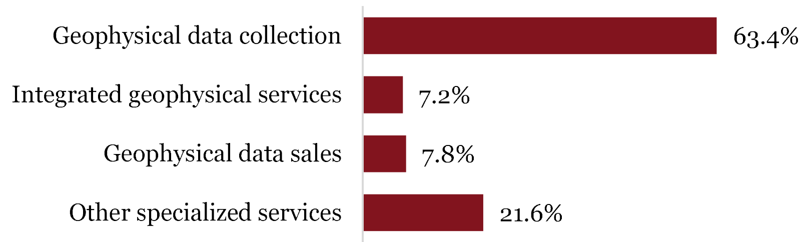
90. Overall, sentiment surrounding global energy prices is relatively bullish, which in turn, would increase demand for geophysical services. However, there is some uncertainty in the outlook of the geophysical services industry relating to tighter capital spending of oil and gas companies.

91. The following slide summarizes forward-looking industry data pertaining to the geophysical services industry.

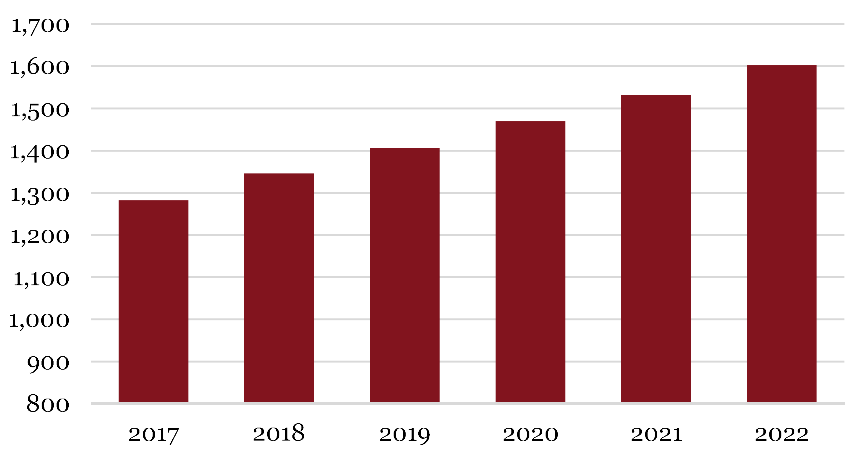
Industry Outlook – Geophysical Services Industry

Outlook on or around November 30, 2017 (cont'd)

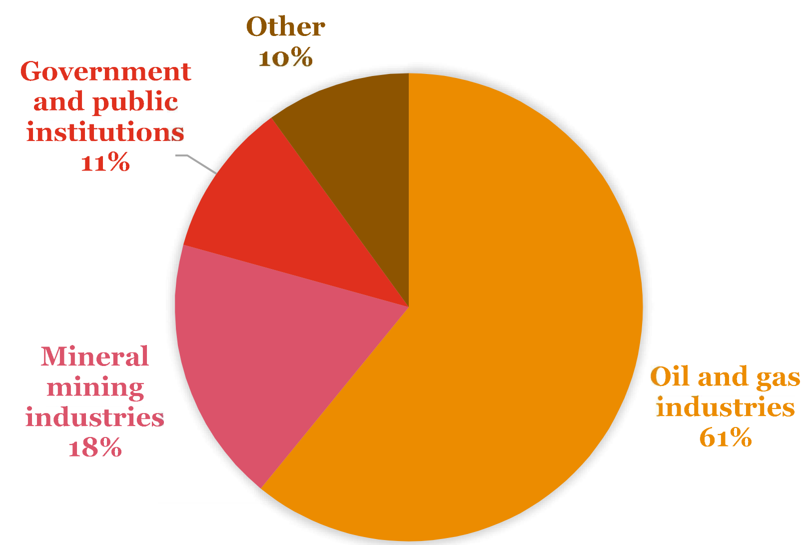
Product and services segmentation



Revenue estimate (in $ millions)



MAJOR MARKET SEGMENTATION



(1) *Geophysical data collection: The surveying and mapping of subsurface terrain and formations. Includes techniques such as 2D, 3D and 4D seismic surveys, magnetic surveys, gravity surveys and electrical and electromagnetic surveys.*
(2) *Geophysical data sales: The sale of seismic data to third-party exploration operators.*
(3) *Integrated geophysical services: Third-party data that is used to incorporate multiple surveys into a single data set.*
(4) *Other specialized services: Refers to the acquisition and processing of geophysical data as well as borehole logging surveys.*

Industry Outlook – Geophysical Services Industry

Outlook on or around June 30, 2022

92. The size of the geophysical services industry, as measured by total revenue, has contracted considerably since 2017 due to the COVID-19 pandemic. During 2020, oil and gas drilling saw a sharp decrease in activity, which in turn, directly effected demand for geophysical and seismic surveying.

93. Total industry revenue is expected to reach approximately $867 million in 2022 compared with total revenue of approximately $1.3 billion in 2017. Industry revenue is forecast to climb at an annualized rate of 1.9% to $952 million over the next five years.

94. It is noted that certain recent developments could have a potential impact on the outlook of the geophysical services industry. This includes the following:

    94.1. The ongoing Russia-Ukraine conflict;

    94.2. Rising global interest rates; and

    94.3. A shift in the capital spending habits of oil and gas companies post-COVID-19.

95. Since the Russia-Ukraine conflict began in February 2022, foreign policy has generally shifted to restrict energy imports from Russia. With Russia being the third largest global producer of crude oil, this puts downward pressure on the global energy supply.

96. Furthermore, the U.S. Energy Department has since resorted to releasing approximately 180 million barrels from the U.S. Strategic Petroleum Reserve, putting the overall reserve at its lowest level since 1984.

97. Expectations on global energy prices are generally bullish given the discussed supply pressures coupled with a sharp return in demand, post-COVID-19.

98. Another recent development is the continued increase in global interest rates. Rising interest rates can cause dramatic shifts in consumer confidence, therefore negatively affecting aggregate demand.

99. Additionally, an increase in interest rates directly effects the overall level of capital spending. Capital-intensive industries, such as the oil and gas industry, typically rely on borrowing to fund capital projects. As such, the increased cost of borrowing may put downward pressure on the level of oil and gas projects and therefore the demand for geophysical services.

100. Lastly, since the rebound in global energy prices post-COVID-19, oil and gas companies have made a dramatic shift in their capital spending habits. Generally, oil and gas companies have shifted their focus away from growth-oriented capital projects to debt-reduction and returning value to shareholders in the form of share buybacks and dividend increases.

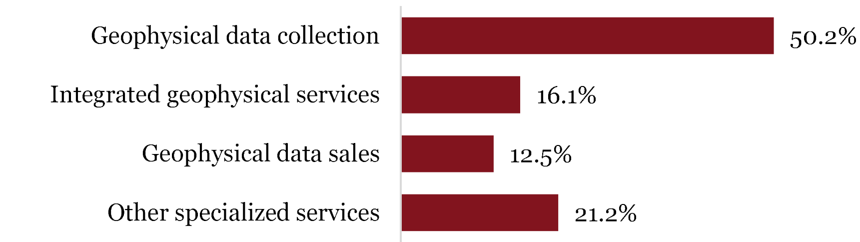
101. This trend of a more conservative approach to capital spending is likely to have an impact on the demand for geophysical services.

102. The following slide summarizes forward-looking industry data pertaining to the geophysical services industry.

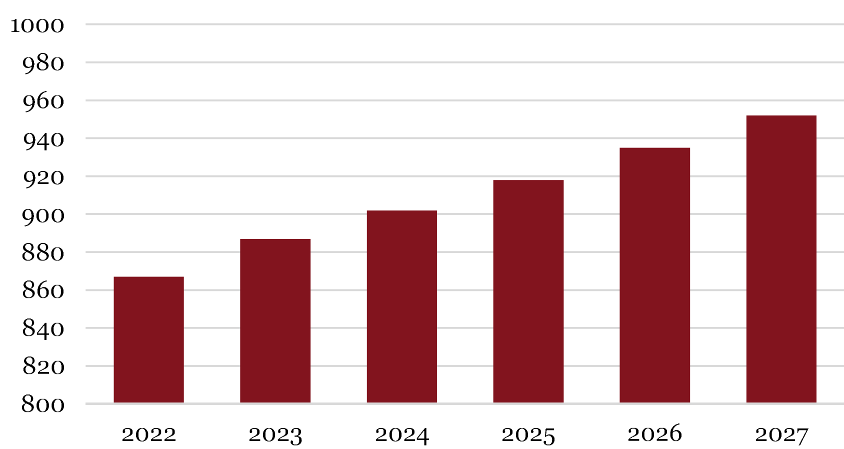
Industry Outlook – Geophysical Services Industry

Outlook on or around June 30, 2022 (cont'd)

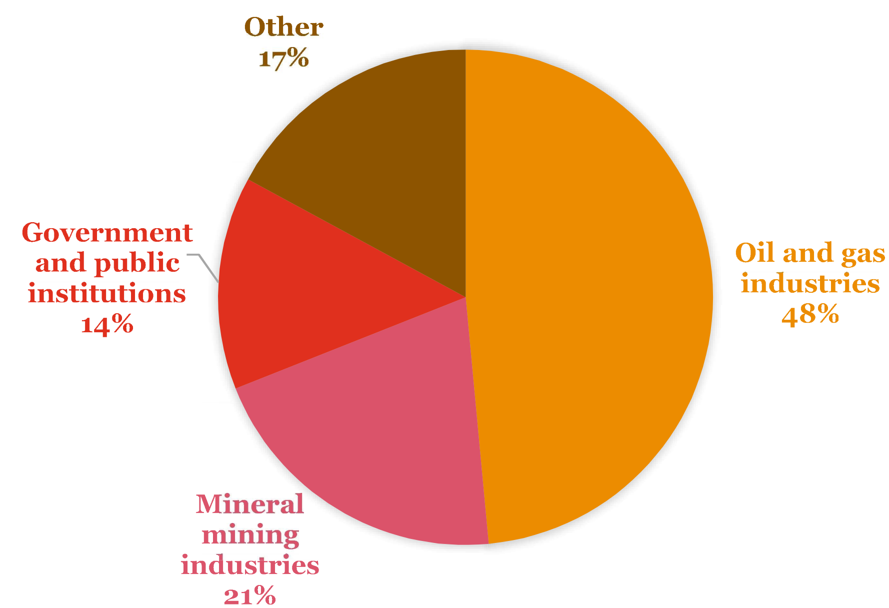
Product and services segmentation



Revenue estimate (in $ millions)



MAJOR MARKET SEGMENTATION



(1) Geophysical data collection: The surveying and mapping of subsurface terrain and formations. Includes techniques such as 2D, 3D and 4D seismic surveys, magnetic surveys, gravity surveys and electrical and electromagnetic surveys.
(2) Geophysical data sales: The sale of seismic data to third-party exploration operators.
(3) Integrated geophysical services: Third-party data that is used to incorporate multiple surveys into a single data set.
(4) Other specialized services: Refers to the acquisition and processing of geophysical data as well as borehole logging surveys.

Glossary

Term	Definition
BLG	Borden Ladner Gervais LLP
But-for-Scenario	The assumption that certain actions on the part of the Government of Canada did not occur
CAD	Canadian Dollar ($)
CAPM	Capital Asset Pricing Model
CBV	Chartered Business Valuator
CBV Institute	Chartered Business Valuator Institute
CCA	Capital Cost Allowance
CCF	Capitalized cash flow
Claimants	Mr. Theodore David Einarsson, Mr. Harold Paul Einarsson, Mr. Russell John Einarsson, and GSI
CNLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CNSOPB	Canada-Nova Scotia Offshore Petroleum Board
Company	Geophysical Service Incorporated
DCF	Discounted cash flow
Disclosed Data	The data disclosed by Canadian governmental agencies to various third parties
Disclosures	The disclosures of certain non-exclusive seismic data to third parties by Canadian governmental agencies
E&P	Exploration and Production
EBITDA	Earnings before interest, tax, depreciation and amortization

Glossary

Term	Definition
FV	Fair Value
G&A	General administrative costs or indirect costs
GSI	Geophysical Service Incorporated
Messrs. Einarsson	Mr. Theodore David Einarsson, Mr. Harold Paul Einarsson and Mr. Russell John Einarsson
Mr. Davey Einarsson	Mr. Theodore David Einarsson
Mr. Paul Einarsson	Mr. Harold Paul Einarsson
Mr. Russell Einarsson	Mr. Russell John Einarsson
NBV	Net book value
NEB	National Energy Board
OPEC	Organization of the Petroleum Exporting Countries
Original GSI	GSI's predecessor
PwC	PricewaterhouseCoopers LLP ("we" or "us")
Seismic Data	The seismic data owned by GSI
TTM	Trailing Twelve Month
Unpaid Invoice Listing	Listing of certain invoices from 2011 to 2016 that include unpaid fees
Valuation Dates	November 30, 2017 and June 30, 2022
WACC	Weighted average cost of capital

Schedules

Geophysical Service Inc.

Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022

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Geophysical Service Inc. **Schedule A1.5**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Accrued Interest on 2017 Losses - Lost Loan Due to Shareholder of Affiliate
in $CAD, except as otherwise indicated

	Notes	2017	2018	2019	2020	2021	2022
Lost loan due to shareholder of affiliate		**1,381,705**	**-**	**-**	**-**	**-**	**-**

Interest calculation - Cost of borrowing		2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	1,384,171	1,446,802	1,505,340	1,559,229	1,618,801
Add: Annual loss		1,381,705	-	-	-	-	-
Accumulated loss, end of year, before current period interest		1,381,705	1,384,171	1,446,802	1,505,340	1,559,229	1,618,801
Add: Current period interest		2,466	62,631	58,538	53,889	59,572	39,276
Total accumulated loss, end of year		1,384,171	1,446,802	1,505,340	1,559,229	1,618,801	1,658,077
Accumulated loss, beginning of year		-	1,384,171	1,446,802	1,505,340	1,559,229	1,618,801
Accumulated loss, end of year, before current period interest		1,381,705	1,384,171	1,446,802	1,505,340	1,559,229	1,618,801
Average loss during the year		690,853	1,384,171	1,446,802	1,505,340	1,559,229	1,618,801
Multiplied by: Interest rate	2	4.4%	4.5%	4.0%	3.6%	3.8%	4.9%
Current period interest		2,466	62,631	58,538	53,889	59,572	39,276
Sum of interest payable - Cost of borrowing		**276,372**					

Interest calculation - Risk-free rate		2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	1,383,041	1,417,585	1,445,592	1,463,592	1,491,016
Add: Annual loss		1,381,705	-	-	-	-	-
Accumulated loss, end of year, before current period interest		1,381,705	1,383,041	1,417,585	1,445,592	1,463,592	1,491,016
Add: Current period interest		1,336	34,544	28,006	18,000	27,424	20,325
Total accumulated loss, end of year		1,383,041	1,417,585	1,445,592	1,463,592	1,491,016	1,511,342
Accumulated loss, beginning of year		-	1,383,041	1,417,585	1,445,592	1,463,592	1,491,016
Accumulated loss, end of year, before current period interest		1,381,705	1,383,041	1,417,585	1,445,592	1,463,592	1,491,016
Average loss during the year		690,853	1,383,041	1,417,585	1,445,592	1,463,592	1,491,016
Multiplied by: Interest rate	3	2.3%	2.5%	2.0%	1.2%	1.9%	2.7%
Current period interest		1,336	34,544	28,006	18,000	27,424	20,325
Sum of interest payable - Risk-free rate		**129,636**					

Notes

(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.
(2) Cost of borrowing is based on the average daily 20-year BBB Canadian corporate bond yield in each year. The average daily rate for 2017 only considers December 2017 and the average daily rate for 2022 only considers January to June 2022.
(3) Risk-free rate is based on the average daily 20-year Canada Soverign Strip yield in each year. The average daily rate for 2017 only considers December 2017 and the average daily rate for 2022 only considers January to June 2022.

Geophysical Service Inc. | **Schedule A1.6**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Accrued Interest on 2017 Losses - Lost Shareholder Loan Due to Mr. Davey Einarsson
in $CAD, except as otherwise indicated

	Notes	2017	2018	2019	2020	2021	2022
Lost shareholder loan due to Mr. Davey Einarsson		**2,391,471**	**-**	**-**	**-**	**-**	**-**

Interest calculation - Cost of borrowing		2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	2,395,739	2,504,141	2,605,460	2,698,732	2,801,839
Add: Annual loss		2,391,471	-	-	-	-	-
Accumulated loss, end of year, before current period interest		2,391,471	2,395,739	2,504,141	2,605,460	2,698,732	2,801,839
Add: Current period interest		4,267	108,403	101,319	93,271	103,108	67,980
Total accumulated loss, end of year		2,395,739	2,504,141	2,605,460	2,698,732	2,801,839	2,869,819
Accumulated loss, beginning of year		-	2,395,739	2,504,141	2,605,460	2,698,732	2,801,839
Accumulated loss, end of year, before current period interest		2,391,471	2,395,739	2,504,141	2,605,460	2,698,732	2,801,839
Average loss during the year		1,195,736	2,395,739	2,504,141	2,605,460	2,698,732	2,801,839
Multiplied by: Interest rate	2	4.4%	4.5%	4.0%	3.6%	3.8%	4.9%
Current period interest		4,267	108,403	101,319	93,271	103,108	67,980
Sum of interest payable - Cost of borrowing		**478,347**					

Interest calculation - Risk-free rate		2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	2,393,783	2,453,573	2,502,047	2,533,202	2,580,668
Add: Annual loss		2,391,471	-	-	-	-	-
Accumulated loss, end of year, before current period interest		2,391,471	2,393,783	2,453,573	2,502,047	2,533,202	2,580,668
Add: Current period interest		2,312	59,789	48,474	31,155	47,466	35,179
Total accumulated loss, end of year		2,393,783	2,453,573	2,502,047	2,533,202	2,580,668	2,615,847
Accumulated loss, beginning of year		-	2,393,783	2,453,573	2,502,047	2,533,202	2,580,668
Accumulated loss, end of year, before current period interest		2,391,471	2,393,783	2,453,573	2,502,047	2,533,202	2,580,668
Average loss during the year		1,195,736	2,393,783	2,453,573	2,502,047	2,533,202	2,580,668
Multiplied by: Interest rate	3	2.3%	2.5%	2.0%	1.2%	1.9%	2.7%
Current period interest		2,312	59,789	48,474	31,155	47,466	35,179
Sum of interest payable - Risk-free rate		**224,376**					

Notes

(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.
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(3) Risk-free rate is based on the average daily 20-year Canada Soverign Strip yield in each year. The average daily rate for 2017 only considers December 2017 and the average daily rate for 2022 only considers January to June 2022.

Geophysical Service Inc. — **Schedule A1.7**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Accrued Interest on 2017 Losses - Lost Shareholder Loan Due to Mr. Paul Einarsson
in $CAD, except as otherwise indicated

	Notes	2017	2018	2019	2020	2021	2022
Lost shareholder loan due to Mr. Paul Einarsson		**1,477,682**	**-**	**-**	**-**	**-**	**-**

Interest calculation - Cost of borrowing	Notes	2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	1,480,319	1,547,301	1,609,905	1,667,537	1,731,247
Add: Annual loss		1,477,682	-	-	-	-	-
Accumulated loss, end of year, before current period interest		1,477,682	1,480,319	1,547,301	1,609,905	1,667,537	1,731,247
Add: Current period interest		2,637	66,982	62,605	57,632	63,710	42,004
Total accumulated loss, end of year		1,480,319	1,547,301	1,609,905	1,667,537	1,731,247	1,773,251
Accumulated loss, beginning of year		-	1,480,319	1,547,301	1,609,905	1,667,537	1,731,247
Accumulated loss, end of year, before current period interest		1,477,682	1,480,319	1,547,301	1,609,905	1,667,537	1,731,247
Average loss during the year		738,841	1,480,319	1,547,301	1,609,905	1,667,537	1,731,247
Multiplied by: Interest rate	2	4.4%	4.5%	4.0%	3.6%	3.8%	4.9%
Current period interest		2,637	66,982	62,605	57,632	63,710	42,004
Sum of interest payable - Cost of borrowing		**295,569**					

Interest calculation - Risk-free rate	Notes	2017	2018	2019	2020	2021	2022
Accumulated loss, beginning of year		-	1,479,111	1,516,054	1,546,006	1,565,257	1,594,586
Add: Annual loss		1,477,682	-	-	-	-	-
Accumulated loss, end of year, before current period interest		1,477,682	1,479,111	1,516,054	1,546,006	1,565,257	1,594,586
Add: Current period interest		1,429	36,944	29,952	19,251	29,329	21,737
Total accumulated loss, end of year		1,479,111	1,516,054	1,546,006	1,565,257	1,594,586	1,616,323
Accumulated loss, beginning of year		-	1,479,111	1,516,054	1,546,006	1,565,257	1,594,586
Accumulated loss, end of year, before current period interest		1,477,682	1,479,111	1,516,054	1,546,006	1,565,257	1,594,586
Average loss during the year		738,841	1,479,111	1,516,054	1,546,006	1,565,257	1,594,586
Multiplied by: Interest rate	3	2.3%	2.5%	2.0%	1.2%	1.9%	2.7%
Current period interest		1,429	36,944	29,952	19,251	29,329	21,737
Sum of interest payable - Risk-free rate		**138,641**					

Notes

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(3) Risk-free rate is based on the average daily 20-year Canada Soverign Strip yield in each year. The average daily rate for 2017 only considers December 2017 and the average daily rate for 2022 only considers January to June 2022.

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Geophysical Service Inc. **Schedule B3**

Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022

Weighted Average Cost of Capital - November 30, 2017

	Symbol	Low	High	Notes
Risk-free rate	Rf	2.35%	2.35%	20 Year CAD Canada Sovereign Strips - November 30, 2017
Equity risk premium	Rp	5.00%	5.00%	Unconditional Equity Risk Premium, adjusted to reflect current market conditions
Relevered equity beta	ß	1.25	1.25	See note 3 below
Size premium	Rs	5.59%	5.59%	2017 Valuation Handbook - Guide to Cost of Capital
Company-specific premium	α	10.00%	15.00%	Described in the Report
Cost of equity	**Ke**	**24.18%**	**29.18%**	**Rf + (Rp * ß) + Rs + α**
Pre-tax cost of debt	i	4.39%	4.39%	20 Year CAD BBB Corporate - November 30, 2017
Tax rate	t	27.5%	27.5%	Statutory tax rate of jurisdiction in which subject company has its headquarters
After-tax cost of debt	**Kd**	**3.18%**	**3.18%**	**i * (1 - t)**
Debt as a % of total capital	d%	40.24%	40.24%	Observed ratios of guideline public companies
After-tax WACC (rounded)	**WACC**	**15.50%**	**18.50%**	**Ke * (1-d%) + Kd * d%**

Guideline Public Companies[2]	Credit Rating	Currency	Unadjusted Equity Beta	Comps Included or Excluded[5]	Debt	Market Cap	Total Capital	Debt/Equity[4]	Tax Rate	Unlevered Beta
Alphageo (India) Limited	n/a	INR	1.16	0	476.8	6,146.1	6,623.0	5.14%	34.61%	1.11
Asian Energy Services Limited	n/a	INR	0.79	1	826.5	6,079.1	6,905.6	94.36%	34.61%	0.47
CGG	n/a	USD	1.59	1	2,903.9	102.4	3,006.3	261.54%	34.09%	0.54
Dawson Geophysical Company	n/a	USD	1.60	1	8.6	106.4	115.0	9.84%	35.00%	1.47
IG Seismic Services PLC	NR	RUB	-0.83	0	17,535.7	182.7	17,718.5	162.72%	12.50%	-0.23
PGS ASA	n/a	USD	1.51	1	1,235.1	509.5	1,744.6	97.78%	24.00%	0.83
Pulse Seismic Inc.	n/a	CAD	0.68	0	-	170.3	170.3	3.91%	28.00%	0.66
SeaBird Exploration Plc	n/a	USD	1.51	0	4.6	581.4	585.9	692.17%	12.50%	0.31
TGS ASA	n/a	USD	1.14	1	2.5	2,475.5	2,478.0	3.22%	24.00%	1.11
Mean (excluding high and low)			**1.41**					**67.33%**		**0.83**

Geophysical Service Inc. **Schedule B3**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Weighted Average Cost of Capital - November 30, 2017

Relevered Beta Analysis		Notes
Unlevered beta[3]	0.83	Mean unlevered beta (excluding high and low)
Debt/Equity	67.33%	
Tax rate	27.48%	
Relevered equity beta[3]	**1.25**	

Sources: Capital IQ*, Bloomberg, Duff & Phelps Cost of Capital Navigator - Guide to Cost of Capital, PwC Tax Summaries

Notes

(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.
(2) See company descriptions on Schedule 4.
(3) Unlevering and relevering of beta computed using the Harris-Pringle formula.
Betas computed on weekly basis over 5 year period prior to valuation date, benchmarked against the S&P 500.
(4) Median debt to market capitalization, based on available annual observations from Capital IQ, for the five-year period prior to the valuation date.
(5) Comparable companies denoted with a "0" as opposed to a "1" in the table above, have been excluded from the CAPM analysis given observations of low average trading volume and/or correlation to systematic risk (i.e. market risk), relative to that of the other somewhat comparable companies.

Geophysical Service Inc. **Schedule B4**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Guideline Public Companies - November 30, 2017

Company name	Reporting Currency	Share price 30-Nov-17	Market Cap	EV	TTM Revenue	FY Revenue	TTM EBITDA	Seismic Data Retrieval	TTM EBITDA	FY EBITDA	EV / TTM EBITDA	EV / Normalized TTM EBITDA	EV / FY EBITDA	EBITDA Margin	Normalized EBITDA Margin	NWC % of Revenue	Capex % of Revenue
Alphageo (India) Limited	INR	$ 965.65	6,146.1	6,275.1	3,686.2	2,148.7	1,087.4	-	1,087.4	678.9	5.8x	5.8x	9.2x	29.5%	29.5%	3.6%	–
Asian Energy Services Limited	INR	$ 206.25	6,079.1	6,614.2	1,243.2	-	(109.7)	-	(109.7)	-	nm	neg	nm	neg	neg	(6.2%)	–
CGG	USD	$ 4.63	102.4	2,709.7	1,248.8	1,212.1	515.3	216.0	299.3	329.1	5.3x	9.1x	8.2x	41.3%	24.0%	31.5%	6.9%
Dawson Geophysical Company	USD	$ 4.67	106.4	72.5	148.1	153.6	(1.4)	-	(1.4)	0.9	nm	neg	nm	neg	neg	11.1%	7.0%
IG Seismic Services PLC	RUB	$ 17.54	182.7	17,854.7	18,804.9	-	3,160.2	-	3,160.2	-	5.6x	5.6x	nm	16.8%	16.8%	43.7%	4.5%
PGS ASA	USD	$ 1.50	509.5	1,720.4	757.0	790.7	375.7	207.3	168.4	324.2	4.6x	10.2x	5.3x	49.6%	22.2%	15.9%	21.1%
Pulse Seismic Inc.	CAD	$ 3.12	170.3	131.6	42.3	42.0	36.1	0.2	35.9	35.0	3.6x	3.7x	3.8x	85.5%	85.1%	(12.7%)	0.1%
SeaBird Exploration Plc	USD	$ 5.80	581.4	584.5	17.2	21.0	(15.0)	-	(15.0)	(13.0)	nm	neg	nm	neg	neg	(118.7%)	9.1%
TGS ASA	USD	$ 24.21	2,475.5	2,273.0	500.2	487.5	433.0	342.4	90.6	406.6	5.2x	25.1x	5.6x	86.6%	18.1%	9.7%	2.2%
Mean											**5.2x**	**7.7x**	**6.4x**	**51.5%**	**23.5%**	**7.6%**	**4.2%**
Median											**5.3x**	**7.4x**	**5.6x**	**45.4%**	**23.1%**	**9.7%**	**4.5%**
Low											**3.6x**	**3.7x**	**3.8x**	**16.8%**	**16.8%**	**(118.7%)**	**–**
High											**5.8x**	**25.1x**	**9.2x**	**86.6%**	**85.1%**	**43.7%**	**21.1%**

Notes
(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.

Sources: Capital IQ*, Company Filings
Mean excludes high and low.

Geophysical Service Inc. **Schedule B5**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Guideline Public Company Descriptions - November 30, 2017

Guideline public company	Industry	Description
Alphageo (India) Limited	Oil and Gas Field Exploration Services	Alphageo (India) Limited provides geophysical seismic data acquisition, processing, and interpretation services for exploration of hydrocarbons and minerals in India and internationally. It offers services, including designing and preplanning of 2D/3D/4D/3C surveys; seismic data acquisition in 2D/3D/4D/3C; seismic data processing and reprocessing/special processing comprising pre-stack imaging, AVO inversion, etc.; and seismic data interpretation that consists of structural and stratigraphic interpretation, and evaluation of blocks for exploration, as well as generation, evaluation, and ranking of prospects. The company's services also include consultancy on 3D/4D/3C surveys; API of EM and GM surveys; reservoir data acquisition and analysis; tape transcription and digitization of hard copies of maps, seismic sections, and well logs into CGM/SEGY/LAS formats; third party quality control for 2D/3D seismic data acquisition and processing; topographic surveys with GPS/RTK; airborne surveys; and geophysical mapping surveys through gravity and magnetic methods for identification of potential areas from mineral prognostication point of view. In addition, it provides onshore and offshore oil and gas field services; and renting of drilling equipment and machinery. Further, the company offers marine survey and aerial geophysical services. Alphageo (India) Limited was incorporated in 1987 and is headquartered in Hyderabad, India.
Asian Energy Services Limited	Oil and Gas Field Exploration Services	Asian Energy Services Limited provides services to energy and minerals sector in India and internationally. It offers services, including 2D/3D land seismic acquisition, transition zone acquisition, on-site data processing, borehole and multiclient seismic, seismic consulting and interpretation, and wireless seismic and data acquisition in real time. The company also operates and maintains onshore and offshore oil and gas facilities; and provides design, drilling management, fracturing, and completion solutions for vertical or directionally drilled wells. In addition, it offers various facilities, such as floating oil production units; floating, production, storage, and offloading; mobile oil production units; and onshore oil and gas terminals. The company was formerly known as Asian Oilfield Services Limited and changed its name to Asian Energy Services Limited in October 2020. The company was incorporated in 1992 and is based in Mumbai, India. Asian Energy Services Limited is a subsidiary of Oilmax Energy Private Limited.
CGG	Oil and Gas Field Exploration Services	CGG provides data, products, services, and solutions in Earth science, data science, sensing, and monitoring in North America, the Central and South Americas, Europe, Africa, the Middle East, and the Asia Pacific. It operates through two segments, Geology, Geophysics & Reservoir; and Equipment. The Geology, Geophysics & Reservoir segment develops and licenses multi-client seismic surveys; processes seismic data; and sells seismic data processing software under the Geovation brand. It also provides geoscience and petroleum engineering consulting services; and data management services and software to its clients, as well as collects, develops, and licenses geological data under the Robertson brand. The Equipment segment manufactures and sells seismic equipment used for land and marine seismic data acquisition, including seismic recording equipment, software, and seismic sources for land vibrators or marine sources under the Sercel, Metrolog, GRC, and DeRegt brands. It also provides customer support services, such as training. The company provides solutions for natural resources, environmental, infrastructure, energy transition, and digital applications. The company was formerly known as Compagnie Générale de Géophysique — Veritas SA and changed its name to CGG in 2013. CGG was incorporated in 1931 and is headquartered in Massy, France.
Dawson Geophysical Company	Oil and Gas Field Exploration Services	Dawson Geophysical Company provides onshore seismic data acquisition and processing services in the United States and Canada. The company acquires and processes 2-D, 3-D, and multi-component seismic data for its clients, including oil and gas companies, and independent oil and gas operators, as well as providers of multi-client data libraries. Its seismic crews supply seismic data primarily to companies engaged in the exploration and development of oil and natural gas on land and in land-to-water transition areas. The company also serves the potash mining industry. Dawson Geophysical Company was founded in 1952 and is headquartered in Midland, Texas. Dawson Geophysical Company is a subsidiary of Wilks Brothers, LLC.
IG Seismic Services PLC	Oil and Gas Field Exploration Services	IG Seismic Services PLC, a land and transition zone seismic company, provides seismic acquisition, data processing, and interpretation services the oil and gas market in Russia and the CIS. It offers 2D, 3D, 4D, 2D3C, and 3D3C; side-scanning seismic surveys; up hole surveys; and seismic refraction method services. The company also provides geophysical data processing and interpretation services. It serves privately owned companies and government agencies in Russia. IG Seismic Services PLC was formerly known as ZAO GEOTECH Holding and changed its name to IG Seismic Services PLC in December 2011. The company is headquartered in Nicosia, Cyprus.

Geophysical Service Inc. **Schedule B5**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Guideline Public Company Descriptions - November 30, 2017

Guideline public company	Industry	Description
PGS ASA	Oil and Gas Field Exploration Services	PGS ASA, together with its subsidiaries, operates as a marine geophysical company primarily in Norway. The company provides a range of seismic and reservoir services, including data acquisition, imaging, interpretation, and field evaluation to oil and gas companies. It also operates in the Asia Pacific, Canada, Egypt, the Americas, Angola, the United Kingdom, Ukraine, Brazil, South Africa, other African countries, the Middle East, and internationally. The company was formerly known as Petroleum Geo-Services ASA and changed its name to PGS ASA in May 2019. PGS ASA was founded in 1991 and is headquartered in Oslo, Norway.
Pulse Seismic Inc.	Oil and Gas Field Exploration Services	Pulse Seismic Inc. acquires, markets, and licenses two-dimensional (2D) and three-dimensional (3D) seismic data for the energy sector in Western Canada. Its data library covers principal areas in Alberta, British Columbia, and Saskatchewan. The company's seismic data is used by oil and natural gas exploration and development companies. It owns and manages licensable seismic data library that consists of approximately 65,310 net square kilometers of 3D seismic; and 8,29,207 linear kilometers of 2D seismic data. The company was formerly known as Pulse Data Inc. and changed its name to Pulse Seismic Inc. in May 2009. Pulse Seismic Inc. was incorporated in 1985 and is headquartered in Calgary, Canada.
SeaBird Exploration Plc	Oil and Gas Field Exploration Services	SeaBird Exploration Plc, together with its subsidiaries, provides marine 2D and 3D seismic data for the oil and gas industry in Europe, Africa, the Middle East, North and South America, and the Asia Pacific. The company offers 2D seismic, and 3D and 3D shallow water acquisition services; and source vessels that provide conventional undershoot, 4D repeat survey, wide azimuth, push reverse, long-term charter and vessel management, in-house source modelling and environmental decay analysis, and spot charter services. It also engages in the marine minerals business. The company was founded in 1996 and is based in Nicosia, Cyprus.
TGS ASA	Oil and Gas Field Exploration Services	TGS ASA provides geoscience data products and services to the oil and gas industry worldwide. The company offers geophysical multi-client data, including seismic data; and geophysical library, such as gravity, magnetic, seep, geothermal, controlled source electromagnetic, and multibeam data. It also provides geological services comprising digital well logs; and interpretation products and data integration solutions. In addition, the company offers imaging services, which include depth and time imaging; marine, land, and ocean bottom cables and nodes; anisotropic imaging; transition zone processing; multi component processing; shear wave; and 4D time-lapse, as well as wide azimuth data processing. Further, it provides data and analytics solutions; and PRIMA, a multifunction exploration software suite. The company was formerly known as TGS-NOPEC Geophysical Company ASA and changed its name to TGS ASA in June 2021. TGS ASA was founded in 1981 and is headquartered in Oslo, Norway.

Notes
(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.
(2) Source: Capital IQ

Geophysical Service Inc. **Schedule B6**

Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022

Precedent Transactions - November 30, 2017

CAD in millions, except as otherwise indicated

Target	Buyer	Close Date	Enterpise Value (EV)	TTM EBITDA	EV /TTM EBITDA
2D Seismic Data Library - Western Canada Sedimentary Basin	Pulse Seismic Inc. (TSX:PSD)	1/26/2016	3.7	n/a	n/a
CWC Energy Services Corp. (TSXV:CWC)	Brookfield Capital Partners Ltd.	12/11/2015	92.6	22.2	4.2x
CanElson Drilling Inc.	Trinidad Drilling Ltd.	8/11/2015	529.6	90.2	5.9x
Teledyne Bolt, Inc.	Teledyne Technologies Incorporated (NYSE:TDY)	11/18/2014	183.1	18.4	9.9x
IROC Energy Services Corp.	Western Energy Services Corp. (TSX:WRG)	4/22/2013	191.2	29.6	6.5x
Fugro NV, Geoscience Division	CGGVeritas	9/24/2012	1,200.0	123.7	9.7x
TGS Canada Corp.	TGS ASA (OB:TGS)	6/15/2012	79.0	n/a	n/a
Canada Tech Corp.	Reservoir Group Limited	7/14/2011	4.8	1.1	4.6x
Minimum					**4.2x**
Average					**6.8x**
Median					**6.2x**
Maximum					**9.9x**

Notes

(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.

(2) Source: Capital IQ

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Geophysical Service Inc. **Schedule C3**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Weighted Average Cost of Capital - June 30, 2022

	Symbol	Low	High	Notes
Risk-free rate	Rf	3.34%	3.34%	20 Year CAD Canada Sovereign Strips - June 30, 2022
Equity risk premium	Rp	5.50%	5.50%	Unconditional Equity Risk Premium, adjusted to reflect current market conditions
Relevered equity beta	ß	1.28	1.28	See note 3 below
Size premium	Rs	4.80%	4.80%	2022 Valuation Handbook - Guide to Cost of Capital
Company-specific premium	α	8.50%	14.00%	Described in the Report
Cost of equity	**Ke**	**23.71%**	**29.21%**	**Rf + (Rp * ß) + Rs + α**
Pre-tax cost of debt	i	5.66%	5.66%	20 Year CAD BBB Corporate - June 30, 2022
Tax rate	t	25.5%	25.5%	Statutory tax rate of jurisdiction in which subject company has its headquarters
After-tax cost of debt	**Kd**	**4.22%**	**4.22%**	**i * (1 - t)**
Debt as a % of total capital	d%	34.34%	34.34%	Observed ratios of guideline public companies
After-tax WACC (rounded)	**WACC**	**17.00%**	**20.50%**	**Ke * (1-d%) + Kd * d%**

Guideline Public Companies[2]	Credit Rating	Currency	Unadjusted Equity Beta	Comps Included or Excluded[5]	Debt	Market Cap	Total Capital	Debt/Equity[4]	Tax Rate	Unlevered Beta
Alphageo (India) Limited	n/a	INR	0.64	0	-	1,775.5	1,775.5	9.78%	34.94%	0.60
Asian Energy Services Limited	n/a	INR	0.56	1	80.8	3,367.7	3,448.4	1.86%	34.94%	0.55
Carbon Transition ASA	n/a	USD	0.66	1	-	26.2	26.2	30.52%	22.00%	0.53
CGG	CCC+	USD	1.36	1	1,313.2	617.3	1,930.5	197.08%	28.93%	0.95
Dawson Geophysical Company	n/a	USD	0.99	1	6.1	31.9	38.0	15.40%	28.60%	0.88
IG Seismic Services PLC	NR	RUB	0.02	0	17,535.7	170.3	17,706.0	162.72%	12.50%	0.09
PGS ASA	CCC+	USD	1.53	1	1,247.3	414.6	1,661.9	264.23%	22.00%	0.96
Pulse Seismic Inc.	n/a	CAD	0.72	0	0.3	111.8	112.1	2.35%	28.00%	0.70
SeaBird Exploration Plc	n/a	USD	1.44	1	21.9	15.3	37.2	15.95%	12.50%	1.26
TGS ASA	n/a	USD	1.13	1	40.6	1,622.5	1,663.0	2.59%	22.00%	1.10
Mean (excluding high and low)			**1.12**					**52.31%**		**0.89**

Geophysical Service Inc. **Schedule C3**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Weighted Average Cost of Capital - June 30, 2022

Relevered Beta Analysis		Notes
Unlevered beta[3]	0.89	Mean unlevered beta (excluding high and low)
Debt/Equity	52.31%	
Tax rate	25.48%	
Relevered equity beta[3]	**1.28**	

Sources: Capital IQ*, Bloomberg, Duff & Phelps Cost of Capital Navigator - Guide to Cost of Capital, PwC Tax Summaries

Notes

(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.

(2) See company descriptions on Schedule 9.

(3) Unlevering and relevering of beta computed using the Harris-Pringle formula.
Betas computed on weekly basis over 5 year period prior to valuation date, benchmarked against the S&P 500.

(4) Median debt to market capitalization, based on available annual observations from Capital IQ, for the five-year period prior to the valuation date.

(5) Comparable companies denoted with a "0" as opposed to a "1" in the table above, have been excluded from the CAPM analysis given observations of low average trading volume and/or correlation to systematic risk (i.e. market risk), relative to that of the other somewhat comparable companies.

Geophysical Service Inc. | **Schedule C4**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Guideline Public Companies - June 30, 2022

Company name	Reporting Currency	Share price 30-Jun-22	Market Cap	EV	TTM Revenue	FY Revenue	TTM EBITDA	Capitalized Seismic Data	Normalized TTM EBITDA	FY EBITDA	EV / TTM EBITDA	EV / Normalized	EV / FY EBITDA	EBITDA Margin	Normalized EBITDA Margin	NWC % of Revenue	Capex % of Revenue
Alphageo (India) Limited	INR	$ 278.95	1,775.5	369.4	1,548.8	-	332.0	-	332.0	-	1.1x	1.1x	nm	21.4%	21.4%	32.7%	4.1%
Asian Energy Services Limited	INR	$ 88.45	3,367.7	2,946.2	2,604.7	-	663.4	-	663.4	-	4.4x	4.4x	nm	25.5%	25.5%	28.9%	16.3%
Carbon Transition ASA	USD	$ 0.11	26.2	22.8	22.4	-	6.6	-	6.6	-	3.5x	3.5x	nm	29.3%	29.3%	(27.8%)	na
CGG	USD	$ 0.87	617.3	1,585.3	1,029.8	1,038.5	533.2	215.4	317.8	423.2	3.0x	5.0x	3.7x	51.8%	30.9%	14.1%	5.4%
Dawson Geophysical Company	USD	$ 1.34	31.9	23.4	31.3	-	(8.6)	-	(8.6)	1.3	nm	neg	17.5x	neg.	neg	72.6%	1.7%
IG Seismic Services PLC	RUB	$ 16.35	170.3	17,842.3	18,804.9	-	3,160.2	-	3,160.2	-	5.6x	5.6x	nm	16.8%	16.8%	43.7%	4.5%
PGS ASA	USD	$ 0.67	414.6	1,498.0	668.3	689.5	354.4	105.9	248.5	387.5	4.2x	6.0x	3.9x	53.0%	37.2%	15.6%	6.6%
Pulse Seismic Inc.	CAD	$ 2.08	111.8	106.8	46.2	26.9	39.0	0.2	38.8	19.0	2.7x	2.8x	5.6x	84.4%	84.0%	1.7%	0.0%
SeaBird Exploration Plc	USD	$ 0.30	15.3	35.8	23.7	24.5	(4.0)	-	(4.0)	0.8	nm	neg	nm	neg.	neg	15.7%	70.5%
TGS ASA	USD	$ 14.00	1,622.5	1,447.5	508.5	514.9	422.4	184.2	238.2	406.6	3.4x	6.1x	3.6x	83.1%	46.8%	(19.6%)	4.5%
Mean											**3.5x**	**4.6x**	**4.4x**	**44.0%**	**31.9%**	**16.6%**	**6.2%**
Median											**3.5x**	**4.7x**	**3.9x**	**40.6%**	**30.1%**	**15.6%**	**4.5%**
Low											**1.1x**	**1.1x**	**3.6x**	**16.8%**	**16.8%**	**(27.8%)**	**0.0%**
High											**5.6x**	**6.1x**	**17.5x**	**84.4%**	**84.0%**	**72.6%**	**70.5%**

Notes
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Sources: Capital IQ*, Company Filings
Mean excludes high and low.

Guideline Public Company Descriptions - June 30, 2022

Guideline public company	Industry	Description
Alphageo (India) Limited	Oil and Gas Field Exploration Services	Alphageo (India) Limited provides geophysical seismic data acquisition, processing, and interpretation services for exploration of hydrocarbons and minerals in India and internationally. It offers services, including designing and preplanning of 2D/3D/4D/3C surveys; seismic data acquisition in 2D/3D/4D/3C; seismic data processing and reprocessing/special processing comprising pre-stack imaging, AVO inversion, etc.; and seismic data interpretation that consists of structural and stratigraphic interpretation, and evaluation of blocks for exploration, as well as generation, evaluation, and ranking of prospects. The company's services also include consultancy on 3D/4D/3C surveys; API of EM and GM surveys; reservoir data acquisition and analysis; tape transcription and digitization of hard copies of maps, seismic sections, and well logs into CGM/SEGY/LAS formats; third party quality control for 2D/3D seismic data acquisition and processing; topographic surveys with GPS/RTK; airborne surveys; and geophysical mapping surveys through gravity and magnetic methods for identification of potential areas from mineral prognostication point of view. In addition, it provides onshore and offshore oil and gas field services; and renting of drilling equipment and machinery. Further, the company offers marine survey and aerial geophysical services. Alphageo (India) Limited was incorporated in 1987 and is headquartered in Hyderabad, India.
Asian Energy Services Limited	Oil and Gas Field Exploration Services	Asian Energy Services Limited provides services to energy and minerals sector in India and internationally. It offers services, including 2D/3D land seismic acquisition, transition zone acquisition, on-site data processing, borehole and multiclient seismic, seismic consulting and interpretation, and wireless seismic and data acquisition in real time. The company also operates and maintains onshore and offshore oil and gas facilities; and provides design, drilling management, fracturing, and completion solutions for vertical or directionally drilled wells. In addition, it offers various facilities, such as floating oil production units; floating, production, storage, and offloading; mobile oil production units; and onshore oil and gas terminals. The company was formerly known as Asian Oilfield Services Limited and changed its name to Asian Energy Services Limited in October 2020. The company was incorporated in 1992 and is based in Mumbai, India. Asian Energy Services Limited is a subsidiary of Oilmax Energy Private Limited.
Carbon Transition ASA	Oil and Gas Field Services, not elsewhere classified	Carbon Transition ASA provides ocean bottom node seismic services to oil and gas companies in Norway and the United States. The company was formerly known as Axxis Geo Solutions ASA and changed its name to Carbon Transition ASA in August 2021. Carbon Transition ASA was founded in 2006 and is based in Oslo, Norway.
CGG	Oil and Gas Field Exploration Services	CGG provides data, products, services, and solutions in Earth science, data science, sensing, and monitoring in North America, the Central and South Americas, Europe, Africa, the Middle East, and the Asia Pacific. It operates through two segments, Geology, Geophysics & Reservoir; and Equipment. The Geology, Geophysics & Reservoir segment develops and licenses multi-client seismic surveys; processes seismic data; and sells seismic data processing software under the Geovation brand. It also provides geoscience and petroleum engineering consulting services; and data management services and software to its clients, as well as collects, develops, and licenses geological data under the Robertson brand. The Equipment segment manufactures and sells seismic equipment used for land and marine seismic data acquisition, including seismic recording equipment, software, and seismic sources for land vibrators or marine sources under the Sercel, Metrolog, GRC, and DeRegt brands. It also provides customer support services, such as training. The company provides solutions for natural resources, environmental, infrastructure, energy transition, and digital applications. The company was formerly known as Compagnie Générale de Géophysique — Veritas SA and changed its name to CGG in 2013. CGG was incorporated in 1931 and is headquartered in Massy, France.
Dawson Geophysical Company	Oil and Gas Field Exploration Services	Dawson Geophysical Company provides onshore seismic data acquisition and processing services in the United States and Canada. The company acquires and processes 2-D, 3-D, and multi-component seismic data for its clients, including oil and gas companies, and independent oil and gas operators, as well as providers of multi-client data libraries. Its seismic crews supply seismic data primarily to companies engaged in the exploration and development of oil and natural gas on land and in land-to-water transition areas. The company also serves the potash mining industry. Dawson Geophysical Company was founded in 1952 and is headquartered in Midland, Texas. Dawson Geophysical Company is a subsidiary of Wilks Brothers, LLC.
IG Seismic Services PLC	Oil and Gas Field Exploration Services	IG Seismic Services PLC, a land and transition zone seismic company, provides seismic acquisition, data processing, and interpretation services the oil and gas market in Russia and the CIS. It offers 2D, 3D, 4D, 2D3C, and 3D3C; side-scanning seismic surveys; up hole surveys; and seismic refraction method services. The company also provides geophysical data processing and interpretation services. It serves privately owned companies and government agencies in Russia. IG Seismic Services PLC was formerly known as ZAO GEOTECH Holding and changed its name to IG Seismic Services PLC in December 2011. The company is headquartered in Nicosia, Cyprus.

Geophysical Service Inc. **Schedule C5**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Guideline Public Company Descriptions - June 30, 2022

Guideline public company	Industry	Description
PGS ASA	Oil and Gas Field Exploration Services	PGS ASA, together with its subsidiaries, operates as a marine geophysical company primarily in Norway. The company provides a range of seismic and reservoir services, including data acquisition, imaging, interpretation, and field evaluation to oil and gas companies. It also operates in the Asia Pacific, Canada, Egypt, the Americas, Angola, the United Kingdom, Ukraine, Brazil, South Africa, other African countries, the Middle East, and internationally. The company was formerly known as Petroleum Geo-Services ASA and changed its name to PGS ASA in May 2019. PGS ASA was founded in 1991 and is headquartered in Oslo, Norway.
Pulse Seismic Inc.	Oil and Gas Field Exploration Services	Pulse Seismic Inc. acquires, markets, and licenses two-dimensional (2D) and three-dimensional (3D) seismic data for the energy sector in Western Canada. Its data library covers principal areas in Alberta, British Columbia, and Saskatchewan. The company's seismic data is used by oil and natural gas exploration and development companies. It owns and manages licensable seismic data library that consists of approximately 65,310 net square kilometers of 3D seismic; and 8,29,207 linear kilometers of 2D seismic data. The company was formerly known as Pulse Data Inc. and changed its name to Pulse Seismic Inc. in May 2009. Pulse Seismic Inc. was incorporated in 1985 and is headquartered in Calgary, Canada.
SeaBird Exploration Plc	Oil and Gas Field Exploration Services	SeaBird Exploration Plc, together with its subsidiaries, provides marine 2D and 3D seismic data for the oil and gas industry in Europe, Africa, the Middle East, North and South America, and the Asia Pacific. The company offers 2D seismic, and 3D and 3D shallow water acquisition services; and source vessels that provide conventional undershoot, 4D repeat survey, wide azimuth, push reverse, long-term charter and vessel management, in-house source modelling and environmental decay analysis, and spot charter services. It also engages in the marine minerals business. The company was founded in 1996 and is based in Nicosia, Cyprus.
TGS ASA	Oil and Gas Field Exploration Services	TGS ASA provides geoscience data products and services to the oil and gas industry worldwide. The company offers geophysical multi-client data, including seismic data; and geophysical library, such as gravity, magnetic, seep, geothermal, controlled source electromagnetic, and multibeam data. It also provides geological services comprising digital well logs; and interpretation products and data integration solutions. In addition, the company offers imaging services, which include depth and time imaging; marine, land, and ocean bottom cables and nodes; anisotropic imaging; transition zone processing; multi component processing; shear wave; and 4D time-lapse, as well as wide azimuth data processing. Further, it provides data and analytics solutions; and PRIMA, a multifunction exploration software suite. The company was formerly known as TGS-NOPEC Geophysical Company ASA and changed its name to TGS ASA in June 2021. TGS ASA was founded in 1981 and is headquartered in Oslo, Norway.

Notes
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(2) Source: Capital IQ

Geophysical Service Inc. **Schedule C6**
Estimate of Fair Market Value of GSI at November 30, 2017 and June 30, 2022
Precedent Transactions - June 30, 2022
CAD, in millions unless otherwise indicated

Target	Buyer	Close Date	Enterpise Value (EV)	TTM EBITDA	EV /TTM EBITDA
Spectrum ASA	TGS ASA (OB:TGS)	8/14/2019	514.2	178.5	2.9x
Seitel Canada Ltd.	Pulse Seismic Inc. (TSX:PSD)	1/15/2019	58.6	na	na
TGS Canada Corp.	TGS ASA (OB:TGS)	1/15/2019	72.0	na	na
Seitel, Inc.	Centerbridge Partners, L.P.	7/17/2018	237.5	57.6	4.1x
Minimum					**2.9x**
Average					**3.5x**
Median					**3.5x**
Maximum					**4.1x**

Notes
(1) This schedule was prepared without audit, forms part of, and should be read in conjunction with our Report.
(2) Source: CapitalIQ

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