

*Theodore David Einarsson, Harold Paul Einarsson, Russell John Einarsson and Geophysical Service Incorporated v. Government of Canada*

*(ICSID CASE NO. UNCT/20/6)*

Expert Rejoinder Report of  
Darrell Chodorow and Alexis Maniatis

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## I. Introduction

1. We have been engaged by the Government of Canada (“Respondent” or “Canada”). We were asked to review and comment on the expert report of Mr. Paul Sharp of PricewaterhouseCoopers LLP, dated 26 September 2022 (the “Sharp 1”), submitted by Theodore David Einarsson, Harold Paul Einarsson, Russell John Einarsson and Geophysical Service Incorporated (together, the “Claimants”). We filed an expert report providing our opinions on 16 January 2023 (“Brattle 1”). Mr. Sharp prepared his second expert report (“Sharp 2”) on 30 May 2024. We have been asked to review and comment upon the opinions expressed in Sharp 2. In addition, we have been asked to review and comment on the opinions expressed the Expert Report of Victor Ancira of Troika USA dated 3 May 2024. Our backgrounds and qualifications are described in Brattle 1.<sup>1</sup> The additional documents we consider in preparing our analysis are listed in Appendix A.

## II. Executive Summary

2. We previously submitted an expert report on damages dated 16 January 2023, critiquing the methods and analyses of Claimants and their quantum expert, Mr. Paul Sharp. Their replies are remarkable, because they concede that the answer to the fundamental question of the value of GSI immediately prior to the alleged expropriation was either zero or too speculative to measure. Still, Claimants continue to rely without modification upon an impossible counterfactual set forth in Sharp 1 that fails to isolate the alleged breach and assumes GSI and its customers would have made different decisions many years prior to the alleged breach. Our initial report also questioned the reliability of key inputs adopted by Mr. Sharp without scrutiny, and which Mr. Sharp now purports to have subjected to unspecified verification procedures. Not only does Mr. Sharp fail to correct errors he now admits with respect to those inputs, but documents provided in GSI’s response to Respondent’s document requests reveal fundamental new errors that escaped Mr. Sharp’s purported verification procedures.

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<sup>1</sup> Brattle 1, Section II and Appendices B and C.

## II.A. Claimants Confirm the Alleged Expropriation Only Affected the Pursuit of Future Litigation Claims and That Any Damages Are Speculative

3. Any damages framework considers the actual world and a counterfactual scenario that isolates the impact of the alleged breach. In this case, we agree with the Claimants that the relevant question concerns the difference in the value of GSI had the Alberta Decisions ruled differently in 2017 regarding the effect of the Regulatory Regime on GSI's alleged copyrights. For example:

*One only has to think of what would have happened if the Alberta Decisions had been different to see how obvious it is that a breach occurred. Had the Alberta Decisions had the opposite outcome, this Arbitration would have been unnecessary as there would not have been any breach of NAFTA and GSI's copyright in its Seismic Works would be enforceable to protect its intellectual property rights. GSI would have won immense damages awards against all of the parties copying the Seismic Works.<sup>2</sup>*

4. Claimants alleged that they lost the ability to pursue this litigation as a result of the Alberta Decisions (i.e., the value of this litigation in the actual scenario is zero). Thus, the proper counterfactual would answer the question of what GSI's litigation claims would be worth in that counterfactual scenario. It is striking, however, that both the Claimants and Mr. Sharp admit any such valuation would be speculative:

**Claimants:** *[Such] litigation claims are highly speculative.<sup>3</sup>*

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**Sharp:** *[T]he valuation of [GSI's] litigation claims [at the Valuation Date]...is highly speculative.<sup>4</sup>*

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<sup>2</sup> Claimants' Rebuttal Memorial, ¶ 108, emphasis added.

<sup>3</sup> Claimants' Rebuttal Memorial, ¶ 355.

<sup>4</sup> Sharp 2, ¶ 24.

5. Equally striking, and correct, is Mr. Sharp's admission that GSI had no value immediately *prior* to the alleged expropriation:

*...GSI was not a going concern immediately prior to the point in time at which the alleged expropriation was formally crystallized...<sup>5</sup>*

6. In fact, GSI ceased to be a going concern years before the alleged expropriation.<sup>6</sup> Indeed, the Court found that GSI had ceased investing in its Canadian business altogether by 2009:

*...the plaintiff [GSI] ceased its seismic exploration in Canada and sold its ships in 2009.<sup>7</sup>*

## II.B. The Value of GSI's Data Library Immediately Before the Alleged Breaches Represents a Conservative Estimate of Damages

7. Because GSI was not a going concern at the time of the alleged expropriation (or indeed for years before), damages cannot exceed the value of data library – the only meaningful asset GSI held at the Valuation Date.<sup>8</sup> Damages would be less than that value, because GSI's library included data that had not been disclosed to the Boards. More specifically, not all data was required to be submitted to the Boards under the Regulatory Regime, some of its data remained subject to the confidentiality period as of the 2017 Valuation Date, and we understand that GSI had failed to submit some of the data required under the Regulatory Regime.
8. The value of GSI's data at that time would have to reflect its physical condition and the market potential at the time of the valuation, as well as the ownership rights over the intellectual property and the risk and costs of its related lawsuits. Although Claimants have provided appraisals of the GSI seismic data library for earlier periods from an independent third-party, they provide no analysis contemporaneous with their Valuation Date.

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<sup>5</sup> Sharp 2, ¶ 144. Emphasis added.

<sup>6</sup> Brattle 1, ¶¶ 160-178.

<sup>7</sup> **BR-4**, Geophysical Service Incorporated v. Encana Corporation, 2015 ABQB 196, dated 19 March 2015, ¶ 8.

<sup>8</sup> GSI also had some cash and prepaid expenses, but these were not affected by the alleged breaches.

## II.C. Claimants Seek to Quantify Damages Based on an Incorrect and Impossible Counterfactual

9. As noted above, the Claimants argue that but for the Alberta Decisions, GSI would have continued its copyright litigation against customers, and it would have “won immense damages awards against all of the parties copying the Seismic Works.”<sup>9</sup> Rather than focusing on those alleged damages, Mr. Sharp instead engages in an irrelevant and impossible counterfactual that lacks any causal link to the Alberta Decisions. He imagines that GSI would have maintained customer relationships that it had destroyed by the litigations filed long before the Alberta Decisions, would have won every litigation it brought against those customers including those alleging contractual breaches rather than copyright infringement, that GSI would have further generated multiple of those revenues, and that it would have a perpetual revenue stream despite the lack of any material investment in its business since 2009.
10. Valuing a counterfactual GSI as a successful perpetual business neither addresses the alleged breaches nor does it make any commercial sense or reflect commercial reality, given that the company was defunct years before the alleged expropriation. Thus, it is unsurprising that Mr. Sharp’s analysis rests heavily on assumptions provided to him by the Claimants that Mr. Sharp admits are “*difficult or impossible to validate, corroborate, or verify.*”<sup>10</sup>
11. Indeed, we note that the independence of Mr. Sharp’s opinions is unclear given the reliance on untestable assumptions that are fundamental to the valuation. That concern is heightened following his reply report which admits certain errors but leaves his valuation unaltered, substituting analysis for speculation.

## II.D. Mr. Sharp’s Analysis Is Unreliable and Contains Fundamental and Obvious Errors

12. Even if Mr. Sharp’s approach were relevant to damages, the implementation is unreliable. We document a series of clear, large, and substantial errors of calculation and of method. Many of these errors follow from Mr. Sharp’s use of data provided by the Claimants without thoughtful review that would have identified these errors and inconsistencies. Our report shows that Mr. Sharp’s analysis:

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<sup>9</sup> Claimants’ Rebuttal Memorial, ¶ 108.

<sup>10</sup> Sharp 2, ¶ 38, emphasis added.

- a. Assumes GSI would earn revenues from past investments that it did not make;
  - b. Contains known errors that Mr. Sharp elects not to correct;
  - c. Relies on verification procedures that missed obvious and substantial errors, including double and triple counting of assumed revenues;
  - d. Assumes that GSI would have been able to collect on invoices issued due to alleged contract breaches by customers (rather than by Respondent), and that customers have disputed and courts have concluded were invalid;
  - e. Understates data acquisition costs; and
  - f. Generates profits margins that are dramatically higher than those earned by the companies that Mr. Sharp himself deems to be most comparable.
13. We also show that Mr. Sharp employs unreliable discount rates and improper assumptions about shareholder loans and lost earnings of the Einarssons.

## II.E. The Troika Valuation of GSI's Library Fails to Comply with Standard Valuation Practice

14. Finally, we address the expert report of Mr. Ancira from Troika USA on the value of GSI's data library based on replacement cost. We explain that Mr. Ancira's analysis ignores a key aspect of the replacement cost method – the deduction for technological and economic obsolescence of GSI's aged data library. As a result, his analysis produces a non-sensical valuation that is at odds with the independent appraisals commissioned by GSI in the normal course of business, and which were completed at a time when GSI's data library would have been newer and therefore more valuable.



### III. Claimants Allege an Expropriation in November 2017 of GSI's Right to Enforce Alleged Copyrights Through Litigation Before Canadian Courts

15. Reliable damages analysis necessarily requires a clear definition of the associated alleged breach(es). This allows the actual scenario to be compared with the appropriate counterfactual, or “but-for,” scenario. Although we found the relationship between the alleged breaches, damages claims, and counterfactual scenario to be ambiguous and inconsistent in the Claimants’ (and Mr. Sharp’s) initial submissions, the Rebuttal Memorial clarifies some elements of the claim.
16. First, it is important to note that the Claimants say they are not challenging the Regulatory Regime through which access to GSI’s seismic data was made available to the public after a period of confidentiality. They confirm that:

*[T]he actionable breach at issue is not in the Submission Legislation or Disclosure Legislation. It is in the Alberta Decisions.*<sup>11</sup>

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*The Claimants are not challenging the Regulatory Regime as it is.*<sup>12</sup>

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*The Regulatory Regime itself did not cause damages to the Claimants.*<sup>13</sup>

17. Second, and following logically from the fact that they do not challenge the Regulatory Regime, Claimants explain that their counterfactual assumes only that GSI should have maintained the right to pursue enforcement of its alleged copyrights in the Canadian courts after the Alberta Decisions:

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<sup>11</sup> Claimants’ Rebuttal Memorial, ¶ 53, emphasis added.

<sup>12</sup> Claimants’ Rebuttal Memorial, ¶ 104, emphasis added.

<sup>13</sup> Claimants’ Rebuttal Memorial, ¶ 118, emphasis added.

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*In this Arbitration, the Claimants attack Canada's confiscatory conduct, which occurred when the Canadian Courts rendered GSI's intellectual property rights unenforceable, and which crystallized into an illegal expropriation on November 30, 2017.<sup>14</sup>*

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*The Alberta Decisions [the first of which was dated 21 April 2016] annihilated GSI's ability to enforce its copyright and to generate licensing revenues.<sup>15</sup>*

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*GSI would have had very valuable proprietary rights in the Seismic Works, but for the Alberta Decisions, as it would have been entitled to damages for the various infringements in the domestic claims and would have been able to continue to sustain its business.<sup>16</sup>*

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*In essence, GSI could no longer enforce its copyrights in the Seismic Materials, effectively destroying GSI's business, as it was entirely contingent on GSI's ability to license the Seismic Materials to third parties in exchange for money (and profits). These are the consequences that Canada is required to address under international law in order to restore the status quo and make full reparation for the injury caused.<sup>17</sup>*

The ability to continue to pursue its copyright claims after the Alberta Decisions, of course, does not provide evidence of how courts would have ruled on those claims in the counterfactual scenario.

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<sup>14</sup> Claimants' Rebuttal Memorial, ¶ 49.

<sup>15</sup> Claimants' Rebuttal Memorial, ¶ 228.

<sup>16</sup> Claimants' Rebuttal Memorial, ¶ 230.

<sup>17</sup> Claimants' Rebuttal Memorial, ¶ 324.

18. Claimants also state that the outcome of the Alberta Decisions (and therefore their consequences for damages) was unanticipated:

*The Alberta Decisions were novel and a departure in the legitimate expectations of the Claimants.* <sup>18</sup>

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*[T]here is nothing to suggest that the intellectual property rights in the Submissions did not or would not remain intact and survive the expiry of the confidentiality period.* <sup>19</sup>

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*The Common Issues Decision...came as a surprise to the Claimants and the legal community.* <sup>20</sup>

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*Based on this novel finding, the Court of Queen's Bench of Alberta concluded that there was an apparent "conflict" between the Regulatory Regime and the Copyright Act. Again, the existence of this "conflict" was not foreseeable ...* <sup>21</sup>

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*To the contrary, the Claimants were not and could not have been aware of [the alleged breaches], first and foremost because Canada's confiscatory conduct only crystallized in 2017.* <sup>22</sup>

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<sup>18</sup> Claimants' Rebuttal Memorial, ¶ 83.

<sup>19</sup> Claimants' Rebuttal Memorial, ¶ 279.

<sup>20</sup> Claimants' Rebuttal Memorial, ¶ 266.

<sup>21</sup> Claimants' Rebuttal Memorial, ¶ 267.

<sup>22</sup> Claimants' Rebuttal Memorial, ¶ 56.

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*...Claimants, as well as the legal community, could not know that the Canadian Courts would create an unprecedented, novel type of compulsory license with a confiscatory character rendering the Claimants' copyrights unenforceable against copiers.<sup>23</sup>*

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*The Claimants Could Not Know of Their Damages Before the Alberta Decisions Became Final...It goes without saying that, if the Claimants did not know and could not know of the Alberta Decisions' outcome and their confiscatory effects before they became final, they could not know that GSI would be expropriated.<sup>24</sup>*

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*The Alberta Decisions determined that there was no more exclusive copyright in seismic data. The result of that decision was that GSI's business was expropriated.<sup>25</sup>*

19. Thus, Claimants say that the ability to continue to litigate copyright infringement was taken away by the Alberta Decisions and resulted in the alleged expropriation.
20. Claimants also acknowledge that the standard for damages in cases of expropriation under NAFTA is the one recognized in economic theory and common to many investment treaties:

*[T]he compensation to be granted to the investor shall be equivalent to the fair market value of the expropriated investment immediately before the expropriation took place.<sup>26</sup>*

21. In this case, this would refer to the fair market value of GSI immediately before the Alberta Decisions in November 2017.

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<sup>23</sup> Claimants' Rebuttal Memorial, ¶ 116.

<sup>24</sup> Claimants' Rebuttal Memorial, Heading III.C.4, ¶ 118.

<sup>25</sup> Claimants' Rebuttal Memorial, ¶ 223.

<sup>26</sup> Claimants' Rebuttal Memorial, ¶ 334.

## IV. The Correct Counterfactual Is One in Which GSI Retains the Right to Continue Pursuing Enforcement of the Alleged Copyright Violations After the Alberta Decisions

22. Claimants and Mr. Sharp assume that, had the Alberta Decisions rejected the argument that the *Canada Petroleum Resources Act* (“CPRA”) supplants more general laws such as the *Copyright Act* and the *Access to Information Act*, then GSI would have been successful in its copyright infringement litigation.<sup>27</sup> As a threshold matter, however, we are instructed that the Alberta Decisions ruled only on the Regulatory Regime. Had the Court ruled differently regarding the Regulatory Regime, we are instructed that the Court would have had to evaluate other potential copyright defenses, such as fair dealing. There is evidence that the Court may have dismissed GSI on these other defenses had they been adjudicated. For example, in the *CalWest* decision, although the Alberta Court did not need to decide on fair dealing as a defence, the Court noted that “...on the evidence, it is likely in my view that this defence could have succeeded.”<sup>28</sup> We do not offer legal opinions, however it is clear from a damages perspective that in order to estimate the value of the claims, it is necessary to assess the Respondent’s defenses, as well as those of private defendants, and their counterfactual probabilities of success.
23. When framing damages, the correct counterfactual is one where GSI would have continued to pursue litigation against its former customers for infringement of alleged copyrights<sup>29</sup> *after* the Alberta Decisions in 2017.<sup>30</sup>
24. This is because Claimants assert that (1) the alleged breaches made impossible GSI’s continued pursuit of its copyright infringement claims in the Canadian courts;<sup>31</sup> (2) the expropriation was

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<sup>27</sup> Claimants’ Rebuttal Memorial, ¶ 108; Sharp 2, ¶ 18.

<sup>28</sup> **R-150**, *Geophysical Service Incorporated v 612469 Alberta Limited* (CalWest Printing & Reproductions), 2016 ABQB 356, Reasons for Judgment, dated 28 June 2016, ¶ 43.

<sup>29</sup> Claimants’ Rebuttal Memorial, ¶ 323.

<sup>30</sup> “As mentioned in Resolute, ‘a breach of Article 1110(1) occurs when the expropriation (as there defined) occurs and not before.’” Claimants’ Rebuttal Memorial, ¶ 118.

<sup>31</sup> Claimants’ Rebuttal Memorial, ¶¶ 49 and 228; Sharp 2, ¶ 18.

not anticipated prior to the Alberta Decisions being issued;<sup>32</sup> and (3) the damages standard is the value of the expropriated asset immediately prior to the expropriation (or prior to its being anticipated).<sup>33</sup> If the Alberta Decisions were unexpected, the decisions could not have materially depressed the value of GSI prior to their issuance. It follows that the damages analysis should address the counterfactual in which GSI had retained the right to continue pursuing enforcement of the alleged copyright violations after the Alberta Decisions.

25. Claimants appear to agree:

*One only has to think of what would have happened if the Alberta Decisions had been different to see how obvious it is that a breach occurred. Had the Alberta Decisions had the opposite outcome, this Arbitration would have been unnecessary as there would not have been any breach of NAFTA and GSI's copyright in its Seismic Works would be enforceable to protect its intellectual property rights.*<sup>34</sup>

26. And Mr. Sharp, in describing his mandate, also appears to agree:

*[Damages are calculated] assuming a scenario wherein certain alleged actions on the part of the Government of Canada that rendered the intellectual property rights of GSI in its seismic works unenforceable in or through certain Canadian court decisions did not occur ("But-for Scenario").*<sup>35</sup>

27. Figure 1 illustrates the correct counterfactual – absent the Alberta Decisions, GSI would have continued to pursue the same types of litigation that had destroyed its customer relationships long before the Alberta Decisions and through which GSI hoped to generate future damages. However, that outcome was highly uncertain because of the unknown probability associated with each potential litigation outcome that would exist in the counterfactual scenario (illustrated by the “%?” in the figure below). One possibility is that in each litigation, or possibly in a second common issues proceeding, the courts would determine whether the asserted other defences defeated GSI's claims. If those defences were successful, there would be no

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<sup>32</sup> Claimants' Rebuttal Memorial, ¶¶ 94, 101, and 263.

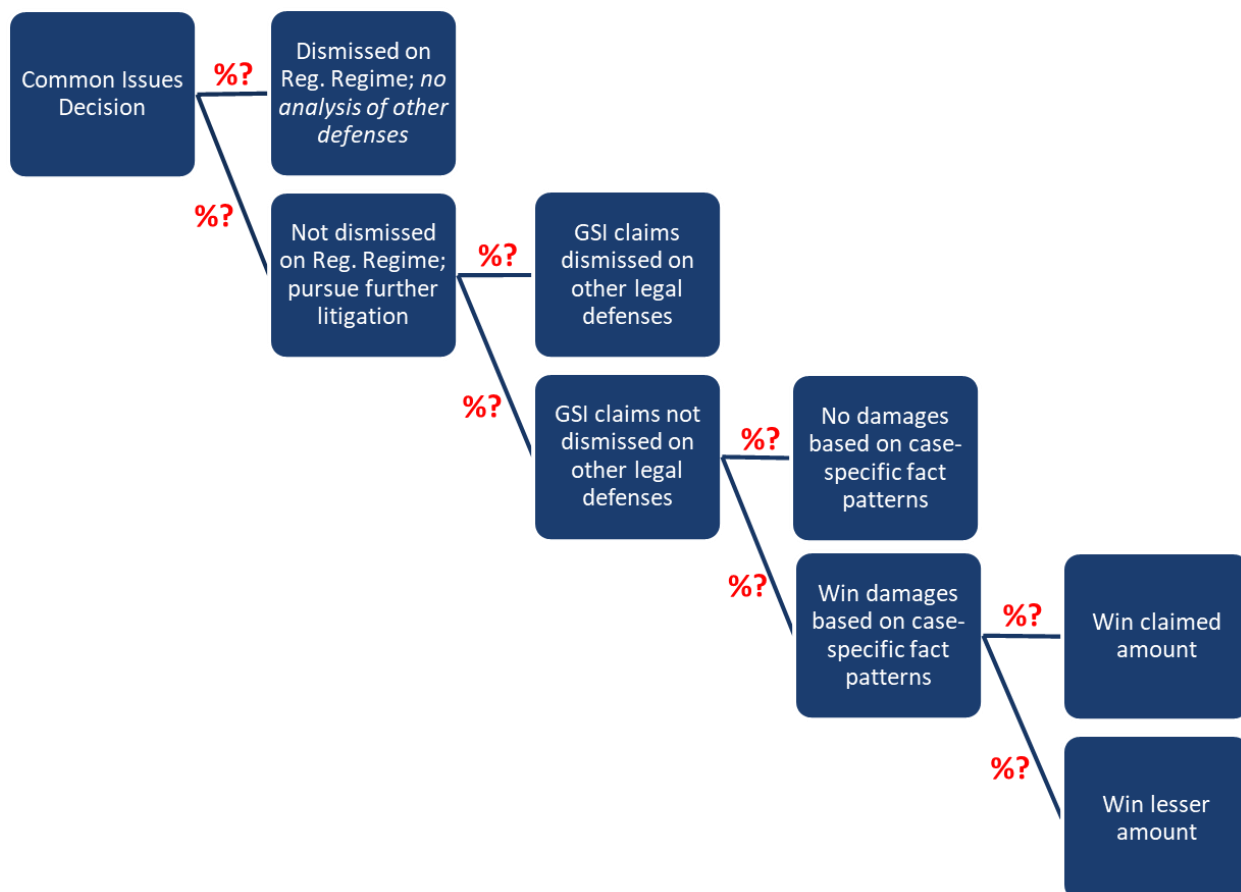
<sup>33</sup> Claimants' Rebuttal Memorial, ¶ 334; Sharp 2, ¶ 34.

<sup>34</sup> Claimants' Rebuttal Memorial, ¶ 108, emphasis added.

<sup>35</sup> Sharp 2, ¶ 2.a, emphasis added. The footnote confirms that the decisions refers to “2016 AB QB 230, 2017 ABCA 125, and 2017 SCC 37634).”

damages. In those cases where the court rejected the defendant's defences, GSI could continue to pursue damages. Whether damages would be awarded and the amount relative to the amounts claimed would depend on the facts of each specific case.

FIGURE 1: LITIGATION RISK IN THE CORRECT COUNTERFACTUAL

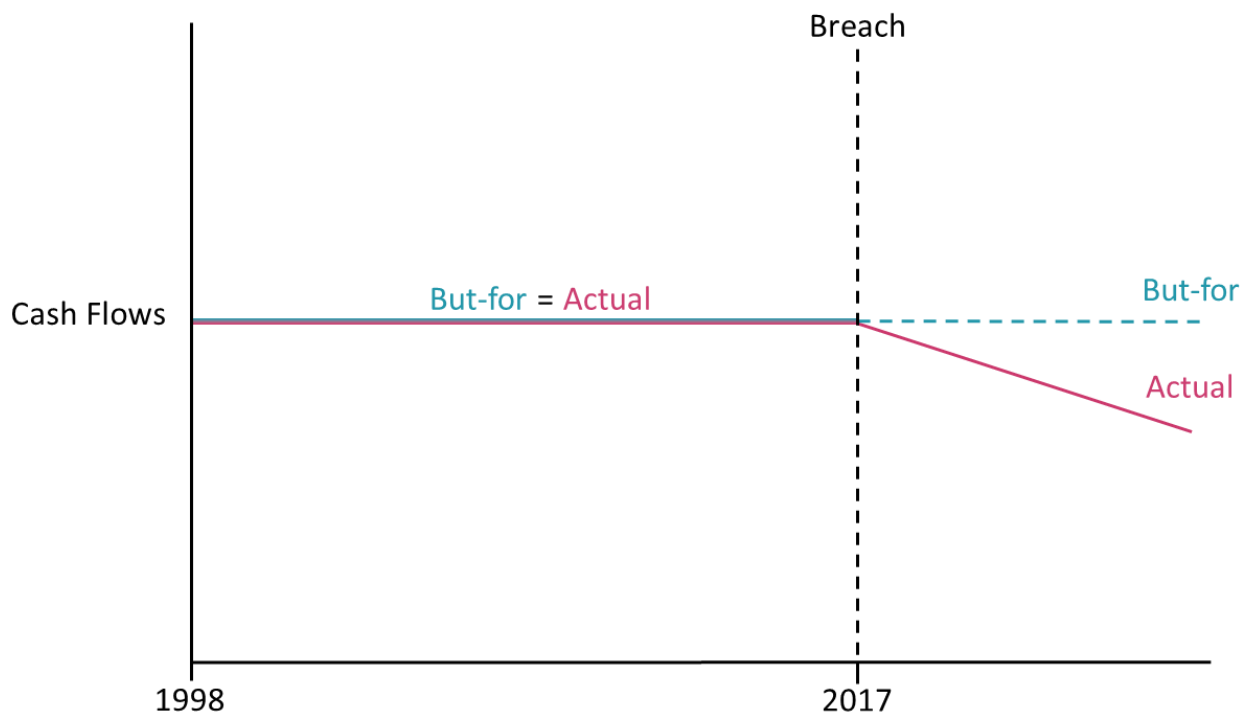


28. We note that as a logical matter, damages cannot precede the expectation or realization of the alleged breaches. Therefore, Canada's actions before the alleged breaches in 2017 cannot create damages in the counterfactual scenario.<sup>36</sup> And similarly, harm to GSI's value caused by GSI's actions prior to the alleged breaches are not part of damages. This includes purported ancillary harm caused by GSI's copyright litigation initiated before the alleged breaches and its

<sup>36</sup> Claimants and Mr. Sharp appear to confuse the flow of time by referring to "ancillary effects" of the Alberta Decisions. In our understanding, however, ancillary effects would follow from the Alberta Decisions rather than precede them given that these decisions were not expected prior to their issuances.

pursuit of breach-of-contract claims against its own customers. It also follows that any relevant time bars that would have limited the success of copyright enforcement or contract claims against customers would continue to apply in the counterfactual world as in the actual world.<sup>37</sup> Put more simply: the actual scenario and the counterfactual scenario must be the same prior to the alleged breaches in 2017. They diverge only thereafter.

FIGURE 2: DAMAGES FOLLOW THE BREACH



29. The damages quantification task is thus to estimate the value of expected litigation recoveries (net of legal costs) after the Alberta Decisions, had they preserved GSI's legal right to seek enforcement of its alleged copyrights.
30. Despite recognizing that the correct counterfactual is the one in which GSI could continue to pursue litigation, and as discussed in detail in the sections that follow, Mr. Sharp's analysis does not answer the question of "*what would have happened if the Alberta Decisions had been different*" and instead implements an entirely different counterfactual.<sup>38</sup>

<sup>37</sup> For example, the unexpected Alberta Decisions in 2017 could not have influenced GSI's decision about when to file contract claims against customers in cases brought years before the Alberta Decisions were issued.

<sup>38</sup> Claimants' Rebuttal Memorial, ¶ 108, emphasis added.



## V. The Value of the Right to Pursue Enforcement of the Alleged Copyrights at the Time of the Alleged Expropriation is Speculative

31. As we discuss in detail in the sections that follow, the Claimants and Mr. Sharp do not evaluate the correct counterfactual. Estimating damages in such a scenario requires a litigation-risk analysis of the relevant time bars, the likelihood of success for each claim, and the costs to pursue the litigation, assuming the courts had sustained GSI's right to continue to pursue its alleged copyrights in the Alberta Decisions. Instead, Claimants assume complete success such that "*GSI would have won immense damages awards against all of the parties copying the Seismic Works.*"<sup>39</sup>
32. We are instructed that the legal issues involved in such an analysis include evaluation of the defences available to Canada or other potential defendants under the *Copyright Act* and/or common law, such as fair dealing, Crown copyright, library exception, laches, and acquiescence. The litigation-risk analysis would have to estimate the probability of success of such defences for each claim. For the branches of the tree of probabilities where GSI succeeds, an analysis of the damages that might be awarded is needed, along with the likelihood of the ultimate recovery.<sup>40</sup>
33. It cannot be assumed, as Claimants do, that merely because GSI asserts a claim, it succeeds, or that if it succeeds it recovers all its alleged damages. For example, in March 2014, GSI sued Total. It claimed \$12.6 million for contract breaches arising from access of GSI's data through the Boards and an additional \$2.8 million for secondary submissions to the Boards – amounts claimed based on GSI's list price increased by a 50% penalty.<sup>41</sup> GSI's case against Total for violation of its licensing agreement experienced only limited success. Responsibility for that invoice was ultimately litigated. The Court found that Total violated the licensing agreement by accessing data from the Boards, but it awarded GSI damages of only US\$0.97 million of the

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<sup>39</sup> Claimants' Rebuttal Memorial, ¶ 108, emphasis added.

<sup>40</sup> We understand that GSI has not quantified any claims it would have had against Canada under the Copyright Act, whether limitations periods would have applied, and what the standard of damages is for those specific copyright violations.

<sup>41</sup> **BR-39**, Statement of Claim, GSI v. Total, dated 28 March 2014. See ¶¶ 18(e) and 41-42.

claimed \$15.5 million – about 6 cents on the dollar claimed.<sup>42</sup> We note that the Court excluded part of the damages sought by GSI because they were outside the limitations period.<sup>43</sup> For the remaining amount, the Court found that the charges being sought by GSI *were calculated incorrectly*. Claimant had sought US\$1.8 million, but the court concluded that the proper amount was only US\$0.97 million.<sup>44</sup>

34. In that same case, GSI sued Canada-Newfoundland and Labrador Offshore Petroleum Board (“CNLOPB”) seeking \$15.5 million.<sup>45</sup> We understand that the Court did not engage the damages claims against CNLOPB, which would have raised both liability and damages questions in the counterfactual scenario, each with its own probability of success and quantitative assessments of damages that might be awarded.<sup>46</sup>
35. Similarly, when GSI sued CalWest for alleged copyright violations after CalWest accessed data from the Boards, it was awarded only a small fraction of its claim, and the damages methods advanced by GSI in that case (and which it raises in this case) were rejected. The Court in that case concluded:

*[55] GSI complains that it lost control of its 1982 Data and that to be compensated for this loss an appropriate way would be to look at what it would cost to licence the data properly (\$236,000 Can \$), what the future income stream might have been (\$1.5 million), and the replacement cost today (\$8.5 million – if it could obtain all of the permits required). Other indices of the value of this data is the fact that it was transferred in 1993 as part of the GSI library of data for \$450,000, that it cost \$1.4 million to create in 1982 and the fact that GSI has obtained revenue in the amount of approximately \$400,000 on this data since 1993.*

*[57] In my view, had I to assess damages in this case, considering the lack of proof of actual damages, beyond the loss of control of the data which could be remedied by an injunction potentially, I would have had to resort to nominal or*

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<sup>42</sup> **C-286**, Geophysical Service Incorporated v. Total SA, 2020 ABQB 730, Reasons for Judgment, ¶ 126.

<sup>43</sup> **C-286**, Geophysical Service Incorporated v. Total SA, 2020 ABQB 730, Reasons for Judgment, ¶ 103.

<sup>44</sup> **C-286**, Geophysical Service Incorporated v. Total SA, 2020 ABQB 730, Reasons for Judgment, ¶ 72 and 104.

<sup>45</sup> **BR-39**, Statement of Claim, GSI v. Total, dated 28 March 2014, ¶¶ 43-44.

<sup>46</sup> **BR-40**, Statement of Defence of Canada-Newfoundland and Labrador Offshore Petroleum Board, dated 13 October 2015 describes some defenses raised by the CNLOPB that a Court might evaluate in the counterfactual, for example. We, of course, offer no legal opinion on any matter.

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*statutory damages to be assessed. I agree that on the evidence before me, none of the methods proposed by GSI would apply here.*

*[60] Further, although the loss of control may have meant that through the copying of the microfiches of this data licensing fees could have been avoided however, the better evidence is that this never happened. The microfiches, as far as the evidence before this court can tell, are undisturbed.*

*[61] As such, I would have awarded only nominal damages of \$25,000.<sup>47</sup>*

36. It is unsurprising, therefore, that Claimants and their expert, Mr. Sharp, offer no such analysis and concede it would be highly speculative.<sup>48</sup>

*[Such] litigation claims are highly speculative.<sup>49</sup>*

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*[T]he valuation of [GSI's] litigation claims [at the Valuation Date]...is highly speculative.<sup>50</sup>*

37. We agree. But that means the Claimants have asserted a claim for “immense damages” which they cannot prove.<sup>51</sup>

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<sup>47</sup> R-150, Geophysical Service Incorporated v 612469 Alberta Limited (CalWest Printing & Reproductions), 2016 ABQB 356, Reasons for Judgment, dated 28 June 2016, ¶¶ 55, 57 and (60-61). Emphasis added.

<sup>48</sup> As we discuss in paragraph 97, despite arguing that these claims are highly speculative, Mr. Sharp's analysis assumes that GSI would have been able to collect 100% of this claimed revenue with certainty.

<sup>49</sup> Claimants' Rebuttal Memorial, ¶ 355.

<sup>50</sup> Sharp 2, ¶ 24.

<sup>51</sup> But for the Alberta Decisions, Claimants assert that “GSI would have won immense damages awards against all of the parties copying the Seismic Works.” Claimants' Rebuttal Memorial, ¶ 108.

## VI. Damages Cannot Exceed the Value of GSI's Data Library Immediately Before the Alleged Breaches

38. Although the quantum of damages from a properly structured counterfactual that reflects the value of continued copyright litigation is speculative, it cannot be expected to exceed the entire value of the GSI seismic data library at the alleged expropriation date. In other words, the value of the GSI seismic data library represents the maximum amount of damages that could arise from the Alberta Decisions.
39. There are several reasons. First, we understand that the GSI library data series are more detailed (and more valuable) than the information made available through the Boards, so that the library retains some value even for data available through the Boards. Second, we understand that the GSI data library includes some materials that were still within the confidentiality period when the Alberta Decisions were handed down. Third, pursuing litigation is risky – claims might be time barred, GSI might lose its claims, or it might receive less in damages than hoped. Fourth, litigation is costly. And finally, as discussed in detail below, GSI had destroyed its customer relationships, and it is unclear whether it could sell data to the same customers against which it had pursued litigation. It might hope to sell its library to a competitor, but those competitors might have overlapping data of equal or better quality and therefore may not value those portions of the GSI library.
40. The value of GSI's library necessarily would reflect its physical condition, which we understand is unclear, as well as its age. This is because the value of data tends to decline over time. For example, when presenting its valuations to the banks in [REDACTED] <sup>52</sup> That is why publicly traded companies that amortize their non-exclusive data investments over their economic life do so over periods of 4 years on average.<sup>53</sup> We discuss these considerations further in Section XI.C.
41. The value of GSI's library also would have to reflect its potential market. In Mr. Sharp's counterfactual, it is assumed that much of GSI's data would have already been licensed prior to the alleged breach. Claimants, however, state that they are not seeking those counterfactual

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<sup>52</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 43. Rejoinder Expert Opinion Report of Doug Uffen, ¶¶ 26-27.

<sup>53</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 43.

license fees as damages.<sup>54</sup> This means that there also would have been limited remaining future demand for key components of GSI's existing data library at Mr. Sharp's valuation dates. Indeed, Paul Einarsson explained that the market for offshore data in Canada was limited because of the relatively small number of participants (15-20).<sup>55</sup> [REDACTED]

[REDACTED]<sup>56</sup> This data would have been licensed even more widely in Mr. Sharp's counterfactual prior to the Alberta Decisions.<sup>57</sup>

42. This would have exhausted much of the counterfactual revenue potential for key parts of the GSI data library because: (1) few parties are left without access to the data; (2) the potential for future revenue from equalization or transfer fees is more limited when data is widely held; and (3) the value of data will have diminished as the exploration opportunities from the past (driven, for example, by past offshore drilling activities) would have already been realized or may no longer be active or relevant. Data that was not accessed through the Boards may have

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<sup>54</sup> Claimants' Rebuttal Memorial, ¶ 191.

<sup>55</sup> CWS-12, Witness Statement of Harold Paul Einarsson, ¶ 131.

<sup>56</sup> BR-41, [REDACTED]  
 [REDACTED] BR-42, [REDACTED]  
 [REDACTED]  
 [REDACTED] BR-43, [REDACTED]  
 [REDACTED] BR-44, [REDACTED]  
 [REDACTED]  
 [REDACTED] BR-45, [REDACTED]  
 [REDACTED] BR-46, [REDACTED] BR-47,  
 [REDACTED]  
 [REDACTED] BR-48, [REDACTED]  
 [REDACTED] and BR-49, [REDACTED]  
 [REDACTED]  
 [REDACTED] BR-50, [REDACTED]  
 [REDACTED] BR-51, [REDACTED]  
 [REDACTED]  
 BR-52, [REDACTED]  
 [REDACTED] BR-53, [REDACTED]  
 [REDACTED]  
 [REDACTED]

<sup>57</sup> See, for example, C-111, List of Seismic Works Disclosed by the Boards for data that Mr. Sharp assumes would have been licensed in his counterfactual world.

had limited value, as Mr. Sharp would suggest there was revealed a lack of “market interest” even when potential users could access the information without paying a licensing fee.<sup>58</sup>

## VII. Claimants Seek to Quantify Damages Based on an Incorrect and Impossible Counterfactual

43. Although Claimants allege that the Alberta Decisions constituted the NAFTA breach, and they recognize that the appropriate standard for damages is the value of the expropriated asset immediately prior to the breach, the Claimants and Mr. Sharp employ an entirely different counterfactual that relies on an extraordinary and impossible set of assumptions.
44. In our first report, we show that GSI was not a going concern immediately prior to the alleged expropriation, for reasons that include poor management decisions.<sup>59</sup> Mr. Sharp agrees that the actual value of GSI was nil at the valuation date:

*[T]he actual value of the company at the Valuation Dates...is likely to be nil.*<sup>60</sup>

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<sup>58</sup> Sharp 2, ¶ 27.b. We understand also that some of that data is from areas where there is an E&P moratorium in effect.

<sup>59</sup> Section VI.A of Brattle 1, explains that GSI’s demise was caused many factors including losses on its vessels and on the Falkland Islands data. Mr. Sharp argues that continued to be profitable from 2011 to 2014 despite having taken a loss on the vessels of C\$8.3 million between 2008 and 2010 and that he understand that the investment in Falkland Island data was recouped. (Sharp 2, ¶¶ 150-152). Being profitable in the years after recognizing a loss on the vessels does not undo the loss that was recognized in 2008 to 2010, and the fact that GSI was expending significant amounts of its resources to upgrade the vessels at a time when [REDACTED] and it was deemed appropriate for GSI to recognize an accounting loss on its investment in the vessels. The same is true for Mr. Sharp’s response to our statement about the Falkland Islands data (Sharp 2, ¶ 152) – while GSI might have eventually recouped its investment in the data series, this was not the case even in 2010, contributing to GSI’s financial troubles. (Brattle 1, ¶¶ 163-165 and 168). Mr. Sharp also questions the basis for our statement that losses on the vessels were a primary cause of GSI’s demise (Sharp 2, ¶¶ 150-151). The source for this claim is GSI itself, which stated in its Notice of Intent that due to changes in the Coasting Trade Act that “...GSI’s business suffered significant losses at a critical time, during the 2008 financial crisis, directly leading to its demise.” Notice of Intent to Submit a Claim to Arbitration Under NAFTA Chapter Eleven, dated 10 October 2018, ¶ 98.

<sup>60</sup> Sharp 2, ¶ 24.

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*...GSI was not a going concern immediately prior to the point in time at which the alleged expropriation was formally crystallized...*<sup>61</sup>

45. That is because immediately prior to the alleged expropriation, GSI had failed for years to invest in its business, generated significant losses on its investments in ships,<sup>62</sup> and had destroyed its customer relationships. Those failures are not the result of the Alberta Decisions, nor could they be, since they preceded even the expectation of these alleged breaches by many years.<sup>63</sup>
46. Rather than analyze the correct counterfactual, Mr. Sharp estimates damages as the value of a hypothetical GSI in a different counterfactual. Using a large number of fundamental assumptions given to him by his client, Mr. Sharp imagines that GSI would have taken very different decisions long before the alleged breaches were even expected, made successful investments that GSI never actually made, and developed a perpetual business relying on customers that it had in fact alienated long ago.
47. More specifically, he assumes that, but for the Alberta Decisions, GSI would have been a going concern at the Valuation Dates, including because:
  - a. GSI would not have filed the lawsuits alleging copyright and/or contractual license violations, which it admits destroyed its relationships with existing or potential buyers of GSI data;<sup>64</sup>
  - b. Customers that had contracts with GSI would have paid all equalization and transfer fees that GSI alleged were contractually required even though the companies, and in some cases courts, disagreed;<sup>65</sup>

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<sup>61</sup> Sharp 2, ¶ 144. Emphasis added.

<sup>62</sup> We explained that losses on GSI's vessel investments at the time of the Global Financial Crisis contributed to GSI's financial distress in 2008. (Brattle 1, ¶¶ 163-164). Mr. Sharp and Paul Einarsson both dispute our statement. (Sharp 2, ¶¶ 150-151; **CWS-12**, Witness Statement of Harold Paul Einarsson, ¶ 119). However, our statement reflects the claim made by GSI in its own Notice of Intent:

*As a result of the undermining of this Canadian protection by Canada in the circumstances, GSI's business suffered significant losses at a critical time, during the 2008 financial crisis, directly leading to its demise...GSI was forced to put both of its ships out of service...during late 2007 and 2008, reducing revenues during the 2008 financial crisis, and requiring over USD\$20,000,000 in upgrades and additions to its ships and equipment.* (Notice of Intent to Submit a Claim to Arbitration Under NAFTA Chapter Eleven, dated 10 October 2018, ¶¶ 98-99, emphasis added).

<sup>63</sup> Mr. Sharp performs no analysis of how GSI's own actions contributed to its demise.

<sup>64</sup> Sharp 1, ¶ 35 (p. 12); Sharp 2, ¶ 65.

<sup>65</sup> Sharp 1, ¶ 92 (p. 21); Sharp 2, ¶¶ 50-51.

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- c. Absent access through the Boards, any private company that accessed data from the Boards between 1998 and 2012 would instead have licensed GSI's data and would have paid the prices contained in GSI's 2013 price lists, which were much higher than the prices in effect at the time of the Board Access;<sup>66</sup>
  - d. On average, each exploration and production company that accessed data from the Boards would have paid additional fees equal to 100% of its own license fees;<sup>67</sup>
  - e. On average, each seismic-copy company that accessed data from the Boards either would have paid additional fees equal to 200% of its own license fees (the equivalent of three unidentified customers directly licensing that data from GSI at future list prices);<sup>68</sup>
  - f. GSI's historical data library would continue to generate substantial licensing revenue after 2017;<sup>69</sup> and
  - g. GSI would have continued to invest in new data acquisition between 2009 and the Valuation Dates, which would have continued to generate new licensing revenue after Mr. Sharp's Valuation Dates.<sup>70</sup>
48. These counterfactual assumptions are logically inconsistent with Claimants' arguments about the nature of the breach and/or are economically unreasonable or implausible.
49. First, and fundamentally, Claimants and Mr. Sharp recognize that GSI's business relationships were destroyed before the Alberta Decisions, and as early as 2008, because GSI decided to sue its customers:

*The litigation leading to the Alberta Decisions was unavoidable because GSI had to enforce its copyright in the Seismic Works to protect its copyright and confidentiality, and not be seen as abandoning its copyright and confidentiality in the Seismic Works. That litigation had a negative impact on GSI's reputation with its customers, despite GSI's efforts to be conciliatory with those customers regarding the breaches of copyright and confidentiality in the Seismic Works. GSI made every effort to mitigate any damage to its reputation, but those efforts were ultimately unsuccessful. Once GSI commenced litigation against a party,*

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<sup>66</sup> Sharp 1, ¶ 89 (p. 19); Sharp 2, ¶ 56.

<sup>67</sup> Sharp 1, ¶¶ 85 and 89-90 (p. 19); Sharp 2, ¶ 56.

<sup>68</sup> Sharp 1, ¶¶ 85 and 89-90 (p. 19); Sharp 2, ¶ 56.

<sup>69</sup> Sharp 1, ¶ 68 (p. 16) and WACC Appendix ¶ 39.2.

<sup>70</sup> Sharp 2, ¶55. GSI ceased most investment in acquiring new data after 2008. Brattle 1, ¶ 25.



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*that party never entered into any further licensing arrangements with GSI but for Shell Canada (on one occasion) and GSI has not had any business with Shell since.*<sup>71</sup>

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The Brattle Report also notes that [REDACTED]

[REDACTED]

[REDACTED]

We note that by this time, GSI had commenced litigation to enforce its copyright in its seismic data (which ultimately resulted in the Decisions).<sup>72</sup>

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*If GSI had the ability to protect its copyrights effectively and expediently, the pervasive damage to its relationships with customers across Canada, the United States, and internationally could have been avoided.*<sup>73</sup>

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*Although GSI was impacted by the 2008 downturn, the cause of GSI's financial difficulties was the loss of license fees due to rapidly expanding government publishing, scanning and copying of the Seismic Works, as well as the destruction of GSI's customer relationships due to Canada's interference in those contractual relationships, and the confiscation of GSI's copyright.*<sup>74</sup>

50. If GSI unexpectedly lost the right to enforce its alleged copyrights through litigation only in November 2017, and the attempt to enforce led customers never to return years before this period, not only was the business already destroyed before the alleged expropriation, it would have been destroyed in the counterfactual where GSI retained the ability to continue to pursue such lawsuits following the Alberta Decisions.

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<sup>71</sup> Claimants' Rebuttal Memorial, ¶ 258, emphasis added.

<sup>72</sup> Sharp 2, ¶ 154, emphasis added. Footnote omitted.

<sup>73</sup> Sharp 2, ¶ 65, emphasis added.

<sup>74</sup> Claimants' Rebuttal Memorial, ¶ 360.

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51. Because the GSI business had been destroyed prior to the alleged breach, Claimants' attempt to establish a causal link between its failure as a company and the Alberta Decisions fails. Claimants argue that:

*[S]ince the Alberta Decisions, GSI has not had a single customer. This is evidence that the Alberta Decisions rendered GSI incapable of further marketing the Seismic Works. This is further evidence that the Alberta Decisions destroyed GSI's business by confiscating its intellectual property, rendering GSI's customers able to access and copy the Seismic Works without a fee and even not to respect their existing licence agreements with GSI.*

*The Claimants have established the direct and immediate causation between the Alberta Decisions and GSI's expropriation.* <sup>75</sup>

52. Similarly, Mr. Sharp argues that:

*[A]s a result of the Decisions, GSI's client relationships were negatively impacted when it lost the litigation.* <sup>76</sup>

53. However, the causal link is in fact absent, because GSI also had virtually no customers immediately prior to (and even years before) the alleged breach, and as noted above, not even years earlier.
54. Second, Mr. Sharp's counterfactual imagines that GSI's lawsuits seeking contractual fees not only would have been avoided (sparing it the damage to customer relationships that resulted from the lawsuits), but that those claimed fees would have been collected in full without litigation. He assumes GSI would have collected the "[r]evenue related to transfer and equalization fees that GSI's customers had been contractually obligated to pay" (purportedly shown in C-112), and he attempts to argue causation by alleging those contractual fees were not paid "due to impaired relationships stemming from litigation and failed copyright defenses."<sup>77</sup>

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<sup>75</sup> Claimants' Rebuttal Memorial, ¶¶ 330-331. Footnote omitted.

<sup>76</sup> Sharp 2, ¶ 20.

<sup>77</sup> Sharp 2, ¶ 27.c, emphasis added. We assume Mr. Sharp meant to refer to failed copyright claims rather than defenses.

55. Again, in terms of causation, Mr. Sharp's claim does not make sense, because the contractual license fees allegedly owed to GSI did not depend on (and long preceded) the Alberta Decisions. Additionally, the Alberta Decisions did not prevent those cases from continuing and did not inhibit GSI from pursuing enforcement of its alleged contractual rights (as we understand that GSI continues to do). Mr. Sharp assumes that, absent the Alberta Decisions, customers would have paid (years before the Alberta Decisions) any and all amounts sought by GSI with no damage to their business relationships. This is despite the fact that Claimants also allege the Alberta Decisions expropriated their ability to continue to pursue the same copyright litigation that destroyed their customer relationships. This makes neither temporal nor economic sense.
56. Third, Mr. Sharp, directed by the Claimants, assumes in the but-for scenario that each and every access by an oil company or a copying company as early as 1998 would instead have resulted in a license from GSI at a future list price (higher than the contemporaneous ones). It is impossible to reconcile this assumption with the Claimants' positions that they are not challenging the Regulatory Regime, that the Alberta Decisions were unexpected, and that the breach for which they claim damages occurred in November 2017.
57. These assumptions also contradict basic economic sense, because a willingness to access free data from the Boards is not evidence of a willingness pay the contemporaneous list price to license it (let alone a much higher future list price). Indeed, while Mr. Sharp acknowledges "*the general principle that parties are likely to 'consume more of something when it is free than when it is costly'*"<sup>78</sup> – he then ignores that principle in his analysis. Instead, he accepts from the Claimants "*the assumption provided that instances of data access noted in the Board Data should be treated as instances of licensing in the But-for Scenario.*"<sup>79</sup> Mr. Sharp compounds this disregard for the general economic principle he identifies when he accepts a further instruction from the Claimants "*that the multipliers of 2.0x and 3.0x, which were applied as instructed, are intended to reflect an approximation of the average number of times an instance of access data would have resulted in a license fee.*"<sup>80</sup> Instead, and consistent with the principle cited by Mr. Sharp, accessing such data when it is free or has a low cost is only indicative of who wants the data when it is available for free or at low cost.

58. [REDACTED]

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<sup>78</sup> Sharp 2, ¶ 56.

<sup>79</sup> Sharp 2, ¶ 56.

<sup>80</sup> Sharp 2, ¶ 56.

[REDACTED]

59. In other words, Mr. Sharp does not base his revenue normalization adjustments, and therefore damages, on market prices that would have been charged by GSI or agreed to contemporaneously by customers for data licenses, but instead relies on higher and later prices asserted by GSI in the context of disputed invoices and likely legal claims.
60. Fourth, as explained in detail in our first report, GSI had not invested in acquiring new data that could possibly generate revenue as of the Valuation Date, because it had ceased all investment long before the Alberta Decisions.<sup>85</sup> Mr. Sharp recognizes that GSI stopped investing well before the alleged breaches.<sup>86</sup> Yet Mr. Sharp's counterfactual requires revenues that would have been derived from investment in new data that was never made.
61. This is especially curious, because Paul Einarsson appears to have understood and accepted that GSI made a conscious decision to cease new data acquisition until such time as the courts would confirm GSI's expected outcome on the Alberta Decisions:

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<sup>81</sup> [REDACTED] However, West Canadian also requested this same information in a separate letter about a month later. [REDACTED] BR-12, [REDACTED]

<sup>82</sup> [REDACTED] See BR-54, [REDACTED]

<sup>83</sup> We discuss this further in paragraph 133 below.

<sup>84</sup> [REDACTED] C-558.60, [REDACTED]

<sup>85</sup> Brattle 1, ¶ 33.

<sup>86</sup> Sharp 2, ¶ 55.

*During this period, the Claimants halted further investment until the Canadian Courts confirmed the intellectual property rights of GSI in the Seismic Works, as was reasonable in the circumstances when the enforcement of GSI's intellectual property rights was becoming increasingly difficult to manage.*

*Had GSI been successful in the Alberta Decisions...GSI's business would have been in a financial position to conduct its seismic acquisition portion of its business with sustained revenues from licensing the Seismic Works, thereby adding to the Seismic Works into the future.<sup>87</sup>*

62. In short, Mr. Sharp's damages machine simply *assumes* customers, investment, and perpetual success, even when customer relationships were destroyed, data acquisition investment stopped, vessel investments incurred losses, and at least some of the market potential for past data was exhausted, all of which occurred years before the alleged expropriation in 2017. That counterfactual is divorced from any market reality, and it fails to isolate the alleged breaches from any and all of the problems or management decisions that led to GSI's failure long before the alleged breaches, as discussed extensively in our first report.<sup>88</sup> As a result, Claimants offer the Tribunal no meaningful estimate of damages from the alleged breaches, even as they confirm that GSI likely had no value even prior to the alleged expropriation that resulted from the Alberta Decisions.

## VIII. Even If the Sharp Counterfactual Made Sense and the Methodology Was Reasonable, the Implementation Is Unreliable

63. For reasons discussed above, we find that Mr. Sharp has not modeled a meaningful counterfactual. However, even if his counterfactual were correct, Mr. Sharp's analysis remains flawed. As we explain below, we agree with Mr. Sharp that the valuation of GSI is heavily dependent on revenue assumptions that cannot be verified or tested and that often come directly as instructions from the Claimants. Moreover, we show that Mr. Sharp's analysis:

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<sup>87</sup> CWS-12, Witness Statement of Harold Paul Einarsson, ¶¶ 134-135.

<sup>88</sup> Brattle 1, ¶¶ 160-178.

- a. Lacks independent evidence;
  - b. Assumes GSI would earn revenues from past investments that it did not make;
  - c. Contains known errors that Mr. Sharp elected not to correct;
  - d. Relies on verification procedures that missed obvious and substantial errors;
  - e. Understates data acquisition costs; and
  - f. Generates excessive profit margins.
64. The result is that Mr. Sharp's analysis, even if relevant, is unreliable, and many of its flaws cannot be corrected given the limited information provided by GSI.

## VIII.A. The Sharp Analysis Lacks Independent Evidence

65. It is the role of the independent expert to bring perspective based on market evidence to address the relevant questions and to discipline a party's ungrounded enthusiasm for its own position when it arises. However, Mr. Sharp's first report instead warns the reader that:

*"We relied upon the completeness, accuracy and fair presentation of all the financial information, data, advice, opinion or representations obtained from...GSI management... 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..."<sup>89</sup>*

66. It is, of course, common for experts to rely on legal instructions and assumptions, but critical aspects of Mr. Sharp's evidence on economic topics foundational to his conclusion are simply assumptions from the Claimant that are untested or untestable. As Mr. Sharp acknowledges:

*The nature of this mandate is such that it demands the valuation of GSI under a hypothetical set of circumstances (i.e., the But-for world). This means that many of the assumptions used in such a valuation are difficult or impossible to validate, corroborate, or verify.<sup>90</sup>*

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<sup>89</sup> Sharp 1, ¶ 9 (p. 37). Emphasis added.

<sup>90</sup> Sharp 2, ¶ 38. Emphasis added.

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67. That disclosure is appropriate, but providing it necessarily draws into question Mr. Sharp's conclusions rather than supporting them.
68. In responding to our critiques, Mr. Sharp's second report introduces new arguments that indicate bias or advocacy, because both reports are one-sided and speculative. Mr. Sharp's response also shows indifference to errors that he could have simply corrected in his second report.
69. For example, in our first report, we noted an error that led to an overstatement of normalized revenues for the year 2002. Mr. Sharp responds as follows:

*This error had the total impact of overstating normalized revenues in 2002 by US\$6.285 million, or 6.2% of the US\$101.6 million in normalized revenues for 2002. We do not consider this to be a material amount and ultimately, it would not impact the judgmental selection of maintainable revenues.<sup>91</sup>*

70. In other words, Mr. Sharp admits the error, does not correct it, and instead applies his judgement to exactly offset it, so that his conclusion is unaffected. Moreover, he provides no quantitative analysis of the impact a correction would have in his calculations.
71. Mr. Sharp takes a similar position regarding an error in the amount of an invoice that inflates his estimate of the normalized revenue:

*We compared the line items in the Unpaid Invoice listing to the underlying invoices and noted one error: invoice [REDACTED] appears to have been [REDACTED] in the Unpaid Invoice listing by [REDACTED]. For the remainder, amounts as per the Unpaid Invoice listing agreed to their underlying invoices. The exception noted is immaterial and would ultimately not change our **selection** of maintainable revenues.<sup>92</sup>*

72. Again, Mr. Sharp recognizes an error, does not correct it (and does not show the impact on his calculations of correcting it), and instead uses discretionary "selection" to maintain his previous result.

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<sup>91</sup> Sharp 2, ¶ 53. Emphasis added.

<sup>92</sup> Sharp 2, ¶ 40. Emphasis added.

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73. In response to other critiques, Mr. Sharp speculates about favorable arguments for flaws rather than conducting analysis or stating a balanced view. We noted, for example, that there existed competing (and possibly better) data from other providers that overlaps with data Mr. Sharp assumes would have been licensed from GSI.<sup>93</sup> This means that even if a company accessing the Board data had wanted to or would be required to license it, they might have chosen data from one of GSI's competitors rather than from GSI. The decision to license from GSI would make even less economic sense in any instances where competitor data were available through the Boards for free. Mr. Sharp replies:

*The Brattle Report also asserts that it is not likely that all of the Board-accessed data would have resulted in licensed data to GSI had GSI been able to maintain its copyright ownership. First, they note the existence of competing data overlapping GSI data. No doubt, this data exists today and is available for licensing by oil and gas producers today.*<sup>94</sup>

Having made this admission, Mr. Sharp then speculates that it is acceptable to ignore the effects of competition in his analysis:

*One key question with respect to this data, however, is whether it would exist in the But-for world. It is our understanding that GSI, throughout much of its operating history, including the normalization period, held title to a significant proportion of the available seismic data for offshore Canada. The Hobbs Report notes that multinational competitors TGS and PGS have partnered since 2011 “on several [multi-client] campaigns off the east coast of Canada.” We are not aware of any other holders of significant libraries of competing data in offshore Canada. Furthermore, the 2011 inception of the TGS-PGS partnership occurred after GSI had both ceased investment in new data acquisition and sold its fleet, two events that would not have occurred in the But-for Scenario. It is possible that this TGS-PGS partnership essentially filled a market void. Without the alleged expropriation of GSI's business, this void would not have existed in the But-for Scenario.*<sup>95</sup>

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<sup>93</sup> Rejoinder Expert Report of Robert Hobbs, ¶¶ 22-23.

<sup>94</sup> Sharp 2, ¶ 54. Emphasis added.

<sup>95</sup> Sharp 2, ¶ 55. Emphasis added.



74. Note that Mr. Sharp identifies a “key question,” but does not offer any analysis to answer it, except through speculation favorable to Claimant, including an unsupported conclusion that there would have been no material competition against GSI but for the Alberta Decisions (that in fact followed years later). He ignores key facts, including that SLB, TGS, and CGG had already collected data in Canada even before GSI initiated the lawsuits against its customers<sup>96</sup> and the changes in Canadian law made it easier for companies to compete with GSI going forward by allowing data collection by foreign-flagged vessels.<sup>97</sup> Additionally, Mr. Sharp ignores the market evidence: the fact that overlapping data was being shot and sold by competitors indicates GSI’s Board-accessible data was not as valuable. Competitors only would invest to shoot overlapping data if they expected it would have value, despite GSI’s existing data (including GSI data that could be accessed through the Boards) and in the context of the Regulatory Regime requiring disclosure after a confidentiality period.
75. In the context of the decision not to amend his report to correct errors, we also note Mr. Sharp’s disclaimer in his first report that: “*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.*”<sup>98</sup> His second report similarly disclaims: “*We reserve the right (**but will be under no obligation**) to make revisions to this report should we be made aware of facts existing at the date of this report, which were not known to us when we prepared this report.*”<sup>99</sup> These statements, and Mr. Sharp’s decision not to correct known errors, are contrary to our understanding of the obligation of experts to the Tribunal.

## VIII.B. Mr. Sharp’s Damages Assessment Is Based on Speculative Revenues

76. Critical to Mr. Sharp’s valuation are the revenues that he assumes GSI would have been able to maintain indefinitely beyond each of his two Valuation Dates (the “Maintainable Revenues”),

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<sup>96</sup> Rejoinder Expert Report of Robert Hobbs, ¶¶ 22-23 and 66. He says that “TGS has over 270,000 km of 2D data offshore Newfoundland and Labrador acquired between 1998-2003 and 2011-2019” and “In fact, SLB (formerly Schlumberger/Western/Geco/WesternGeco), and TGS (formerly Digicon/CGG/Spectrum data) acquired significant 2D library as early as 1998. Also CGG’s Nova Scotia 3Ds Phases I and II were acquired in 2000 and 2001.”

<sup>97</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 36.

<sup>98</sup> Sharp 1, ¶ 7 (p. 37), emphasis added.

<sup>99</sup> Sharp 2, Appendix A, ¶ A.7, emphasis added.

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absent the alleged breaches. To forecast GSI's Maintainable Revenues, Mr. Sharp takes his estimate of GSI's 2012 but-for revenues and projects it forward based on the annual percentage change in the global offshore rig count.<sup>100</sup>

77. Mr. Sharp estimates GSI's but-for revenues as the sum of its actual revenues plus an assumed "normalization" adjustment that purports to undo the effects of the alleged breaches. That normalization has two components. The first component is assumed contractual fees that GSI alleges it was owed by customers, but which customers refused to pay (the "Unpaid Invoices" from C-112). The second is revenue that Mr. Sharp assumes GSI would have earned if customers could not access data from the Boards (based on C-111).
78. These normalization adjustments comprise the vast majority of GSI's but-for revenues. For example, Mr. Sharp's normalization adjustment increases [REDACTED] to but-for revenues of C\$145.7 million – an increase of more than [REDACTED]<sup>101</sup> Despite their centrality to his valuation, Mr. Sharp adopts these two revenue normalization adjustments as instructions rather than conclusions based on market evidence or analysis.<sup>102</sup>
79. In response to our critique, Mr. Sharp now purports to have conducted "...additional procedures to perform, where possible, validation of assumptions" where possible.<sup>103</sup> While Mr. Sharp has not provided these analyses in his report, whatever procedures were performed failed to catch obvious and substantial errors that we discuss in Section VIII.B.2. More importantly, even those limited verification procedures could not be performed in many instances. Mr. Sharp reports that "[a]pproximately 37.0% of the total relevant amount from Unpaid Invoices ([REDACTED]) was successfully recalculated and tied back to price lists; for the remaining portion, detail in invoices was insufficient in order to perform these procedures."<sup>104</sup> The reliability of the remaining 63% of the total cannot be assessed in any way, including against price lists. This is important because, as discussed below, where invoices provide detail, there are clear instances of double and even triple counting, customers have

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<sup>100</sup> Sharp 1, ¶¶ 100 and 107 (pp. 22-23).

<sup>101</sup> Sharp 1, Schedule B2.1. This is calculated as C\$145.7 million / C\$10.9 million - 1.

<sup>102</sup> Sharp 1, ¶ 22 (p. 10).

<sup>103</sup> Sharp 2, ¶ 38.

<sup>104</sup> Sharp 2, ¶ 40 and footnote 11.

disputed the validity of charges on these invoices, and courts have ruled that some of the charges assessed by GSI were invalid.<sup>105</sup>

80. Given that Mr. Sharp relies on inputs that cannot be tested or verified in any way, his revenue normalization adjustments, and the resulting valuation based on these adjustments, are speculative.

### **VIII.B.1.Mr. Sharp's Model Assumes Revenues from Investments GSI Never Made**

81. GSI's maintainable revenues forecast for his Valuation Dates are a function of the ability to continue licensing the information contained in its data library. Mr. Hobbs explained that seismic companies generally expect to earn most of their return on new data investment over a relatively short 4-year period following the acquisition of new data.<sup>106</sup> As an economic matter, this means that the revenues collected in any particular year will depend significantly on the new data acquisition in the recently preceding years.
82. Paul Einarsson confirmed that, after 2008, GSI was "becoming significantly less active in creating new Seismic Works."<sup>107</sup> GSI confirmed that it had ceased all investments in new seismic data in Canada by 2009.<sup>108</sup> By Mr. Sharp's 2017 Valuation Date, GSI had not collected any new data for approximately 8 years and by his 2022 Valuation Date, this was about 13 years. The lack of investment over such a long period would be expected to significantly deteriorate GSI's revenue-generating capacity.
83. Mr. Sharp ignores those facts. In valuing GSI, he develops a revenue estimate based on his view of GSI's revenue-generating capacity from 2000 to 2012, which he brings forward to his Valuation Dates using changes in the global rig count. However, given the lack of investment over many years from 2009 to his Valuation Dates, GSI's revenue generation-capacity would have declined by Mr. Sharp's Valuation Dates. Mr. Sharp makes no downward adjustment to GSI's post-Valuation Date revenues to reflect the lack of pre-Valuation Date investment. By failing to account for the adverse impact of GSI's lack of recent investment on revenue, Mr.

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<sup>105</sup> See Section VIII.B.2.

<sup>106</sup> **RER-02**, Robert Hobbs Expert Report, ¶ 77.4.

<sup>107</sup> **CWS-06**, Witness Statement of Harold Paul Einarsson, ¶ 171(f).

<sup>108</sup> **BR-4**, *Geophysical Service Incorporated v. Encana Corporation*, 2015 ABQB 196, dated 19 March 2015, ¶ 8.

Sharp's valuation analysis manufactures post-Valuation Date revenue from pre-Valuation Date investments that the company never actually made.<sup>109</sup>

### **VIII.B.2.Mr. Sharp's Normalized Revenue Analysis Contains Basic Errors Missed by His Verification Efforts**

84. In response to our critiques, in his second report Mr. Sharp attempts to support the adoption of his normalization instructions through "verification procedures" on the adjustments he assumes.<sup>110</sup> Mr. Sharp has not provided these verification analyses, but even a cursory review reveals that the adjustments are unreliable for reasons including that:
- Mr. Sharp incorrectly assumes that GSI had a legal right to Unpaid Invoice amounts, even though customers have disputed them and courts have rejected them as invalid;
  - Mr. Sharp knows of errors in the inputs he was instructed to use, yet he continues to use them without corrections;
  - Mr. Sharp's verification procedures failed to capture obvious errors in the numbers he was instructed to use;
  - It is not possible to test the reliability of much of the data supporting the normalization adjustments that Mr. Sharp was instructed to use because documentation has not been provided; and
  - Mr. Sharp implements the normalization adjustments in a manner that is inconsistent with his instructions – an error we identified in our first report and which he admits but does not correct.
85. Given the lack of underlying support for Mr. Sharp's normalization adjustments, the clear errors in the data and Mr. Sharp's implementation, and the inability to check the reliability of much of the data underlying the normalization adjustment, Mr. Sharp's analysis is unreliable.

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<sup>109</sup> See paragraphs 60-62.

<sup>110</sup> Sharp 2, ¶ 40.

### VIII.B.2.a. Mr. Sharp's Revenue Normalization Adjustments for Unpaid Invoices Contain Errors and Unreasonable Assumptions

86. Mr. Sharp recognizes that the normalization adjustments used in his analysis contain errors.<sup>111</sup> Some of these errors appear to have been identified in his "verification procedures."<sup>112</sup> We cannot assess the reasonableness of the steps taken by Mr. Sharp to conduct his purported verification procedures, because Mr. Sharp did not provide them in his report. Nonetheless, we know that they were ineffective because his revenue normalization adjustments continue to contain clear errors.
87. These errors cause Mr. Sharp to overstate GSI's normalized revenues. This overstatement has two effects on the valuation. First, it causes Mr. Sharp to overstate the but-for revenue forecast. Second, because Mr. Sharp calculates forward-looking expenses based on his derived historical ratio between actual expenses and his estimate of normalized revenues from 2000 to 2008,<sup>113</sup> an overstatement of past normalized revenues will lead to understated costs. In other words, his analysis has overstated revenues and understated costs at the same time.

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#### MR. SHARP INCORRECTLY ASSUMES THAT GSI HAD THE LEGAL RIGHT TO COLLECT UNPAID INVOICE AMOUNTS THAT CUSTOMERS CLAIM WERE NOT DUE

88. Mr. Sharp adopts the Unpaid Invoice amounts for equalization and transfer fees exactly as shown in C-112 to calculate his normalized revenues from 2000 to 2012. He argues that he is not claiming these past lost revenues as damages. Rather, he states that he is trying to figure out what GSI's historical revenues would have been absent the alleged breaches.<sup>114</sup> He assumes that absent the alleged breaches, GSI's revenues would have been higher because it would have collected these fees.
89. By adopting these fees, Mr. Sharp is assuming that GSI would have collected these fees with certainty. This is not justified. Customers have disputed the validity of these claimed amounts, and courts have ruled GSI had no legal right to claim the fees it was seeking.

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<sup>111</sup> Sharp 2, ¶¶ 40, 53, and 68.

<sup>112</sup> Sharp 2, ¶ 40.

<sup>113</sup> Sharp 1, ¶ 111 (p. 24).

<sup>114</sup> Sharp 2, ¶ 50.

90. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]<sup>117</sup> GSI claimed that this transfer fee was due as a result of a corporate tax reorganization that occurred within BP in which triggered the requirement that BP pay a transfer fee.<sup>118</sup> BP argued that no fee was due because this was an internal transfer to a related entity, which was exempted from the transfer fee.<sup>119</sup> The Court sided with BP and found that no transfer fee was due.<sup>120</sup>

91. [REDACTED]<sup>121</sup>  
In its lawsuit against Plains, “GSI [sought] recovery from BP under the MDLA’s indemnity provision...for exploration group members’ failure to pay licensing fees to GSI.”<sup>122</sup> With respect to some of GSI’s claimed equalization charges, the Court found that “[i]t makes no commercial sense for a partner of BP to pay for seismic data it neither accessed nor used, nor is there any commercial reason why GSI should receive compensation therefor.”<sup>123</sup> The Court concluded that GSI’s equalization payment claims were invalid, stating that “GSI’s claim for licensing fees from members of BP’s exploration group cannot succeed and must therefore be dismissed.”<sup>124</sup>

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<sup>115</sup> C-112, [REDACTED]

<sup>116</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶ 5.

<sup>117</sup> C-356.16, [REDACTED]

<sup>118</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶¶ 15-19.

<sup>119</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶ 19.

<sup>120</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶¶ 40-41. See also BR-55, , ¶¶ 6-7.

<sup>121</sup> C-112, [REDACTED]

<sup>122</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶ 51.

<sup>123</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶ 59.

<sup>124</sup> BR-17, Geophysical Service Incorporated v. Plains Midstream Canada ULC, 2022 ABKB 722, dated 01 November 2022, ¶ 74.

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92. Brattle 1 explained that it was unreasonable to assume that these revenues could be collected with certainty, specifically citing to the Plains decision.<sup>125</sup> Mr. Sharp dismissed this critique, asserting that “[t]he fact that claims related to certain invoice charges were dismissed by courts is not a reliable indication that those invoice charges are not valid.”<sup>126</sup> We are instructed that the Plains decision is a clear indication that the invoice charge was not legally valid. Given this instruction, it was unreasonable for Mr. Sharp to include this [REDACTED] in his analysis.
93. Mr. Sharp’s assumption that these Unpaid Invoice revenues could be collected with certainty also ignores the fact that other invoice recipients also were disputing the validity of these claims for reasons other than time limitations. For example, GSI states that ConocoPhillips Canada (“CPC”) licensed GSI data for the Beaufort Sea/Mackenzie Delta region, and that ConocoPhillips later became part of an exploration group focused in that region.<sup>127</sup> [REDACTED]  
[REDACTED]  
[REDACTED]<sup>128</sup> and sued CPC for allegedly breaching its license agreement by entering into this exploration group without each member of the group having obtained a license agreement with GSI.<sup>129</sup>
94. CPC disputed GSI’s claimed fee obligations. Its Statement of Defense argued that “under the [licensing] agreement, a prospective joint venture participant who becomes a member of an exploration group is not automatically required to enter into a seismic data license agreement with GSI.”<sup>130</sup> Specifically, CPC explained these permitted exceptions to the further licensing:

*The agreement provides that, subject to the other limitations in the agreement, CPC may provide prospective joint venture participants with access to the licensed seismic data provided that: (i) the data is in a geographically localized area related to single prospect, parcel, posting or nominated block; and (ii) the*

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<sup>125</sup> Brattle 1, ¶ 80.b.

<sup>126</sup> Sharp 2, ¶ 66.

<sup>127</sup> BR-56, Amended Statement of Claim, GSI v. ConocoPhillips, dated 27 June 2013, ¶¶ 20 and 22.

<sup>128</sup> C-356.18, [REDACTED]

<sup>129</sup> BR-56, Amended Statement of Claim, GSI v. ConocoPhillips, dated 27 June 2013, ¶¶ 26 and 29.

<sup>130</sup> BR-57, ConnocoPhillips – Statement of Defence, dated 19 August 2013, ¶ 21.

*sole purpose is to permit the prospective joint venture participant to evaluate their possible participation in the venture.*<sup>131</sup>

However, the agreement also provides that a prospective joint venture participant who becomes a member of an exploration group is not required to obtain such a use-license if: (i) either CPC or the prospective joint venture participant execute a statutory declaration that the prospective joint venture participant did not view or access the licensed seismic data; or (ii) the prospective joint venture participant has ownership or a use-license to similar or superior 2D or 3D seismic data; or (iii) the prospective joint venture participant already has a license to the relevant seismic data; or (iv) the prospective joint venture participant only viewed or had access to Interpretations (as defined in the agreement) of the licensed seismic data.<sup>132</sup>

95. According to CPC, the equalization fees demanded by GSI were not applicable, because “[a]t all material times, CPC has complied with the terms and conditions set out in the agreement regarding the access and use of the licensed seismic data, including restrictions on the access and use of that data by third parties.”<sup>133</sup> CPC is not alone in disputing these equalization fees – other parties that received Unpaid Invoices lodged similar objections to their alleged obligation to pay these fees.<sup>134</sup>

96. In addition, the limited information available suggests that GSI settled [REDACTED] [REDACTED] Between 2018 and 2021, [REDACTED] [REDACTED] [REDACTED] While we do not know the terms, GSI’s unaudited financial statements for these years provide relevant evidence. [REDACTED]

<sup>131</sup> **BR-57**, ConnocoPhillips – Statement of Defence, dated 19 August 2013, ¶ 17.

<sup>132</sup> **BR-57**, ConnocoPhillips – Statement of Defence, dated 19 August 2013, ¶ 19.

<sup>133</sup> **BR-57**, ConnocoPhillips – Statement of Defence, dated 19 August 2013, ¶ 22. We understand that this litigation is ongoing.

<sup>134</sup> See, for example, **BR-58**, Amended Amended Amended Statement of Defence, GSI v. Husky Oil, dated 31 October 2018 (Husky Oil) and **BR-59**, Statement of Defence, GSI v. Murphy Oil Company LTD., dated 28 March 2014 (Murphy Oil).

<sup>135</sup> [REDACTED]



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>139</sup>

97. By treating the 100% transfer fees and equalization charges in C-112 as legitimate revenue for GSI, Mr. Sharp effectively assumes that the Plains decision and any arguments made in other parties' statements of defense lack merit. We express no opinion on legal matters, but believe that Mr. Sharp's approach fails to analyze or account for the legal risk associated with GSI's alleged right to collect amounts billed on the Unpaid Invoices and is therefore unreasonable. His treatment of the Unpaid Invoice amounts as guaranteed revenue also contradicts his own opinion – Mr. Sharp affirmed his belief that assessing the value associated with GSI's contemporaneous and future lawsuits against customers would be speculative.<sup>140</sup> If the outcome of this litigation is speculative, it is clearly unreasonable to assume that GSI would collect 100% of these disputed revenues with certainty.

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MR. SHARP'S ALLEGED LOST REVENUE FROM UNPAID INVOICES OFTEN DOUBLE AND TRIPLE COUNTS THE SAME LOST REVENUE

98. The "Unpaid Invoices" account for about 70% of Mr. Sharp's total normalization adjustment for 2012 revenue (as well as substantial portions of normalized revenue adjustments in earlier years).<sup>141</sup>

<sup>136</sup> [REDACTED]

[REDACTED]

[REDACTED] BR-54, [REDACTED]

<sup>137</sup> BR-54, [REDACTED]

<sup>138</sup> BR-54, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

<sup>139</sup> C-112, [REDACTED]

[REDACTED]

[REDACTED]

<sup>140</sup> Sharp 2, ¶ 163.

<sup>141</sup> They account for [REDACTED] of the total [REDACTED] adjustment for 2012 revenues. Sharp 1, Schedule B2.1.

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99. Mr. Sharp is aware that the figures he uses for Unpaid Invoices include an instance of double counting. He states that “[REDACTED] appears to have been overstated in the Unpaid Invoice listing by [REDACTED]”<sup>142</sup> Nonetheless, he declines to correct it, arguing that “[t]he exception noted is immaterial and would ultimately not change our selection of maintainable revenues.”<sup>143</sup> Claimants did not provide a native-format version of Mr. Sharp’s model, but it is clear that overstating Unpaid Invoice revenue will overstate normalized revenues, and therefore damages. Mr. Sharp states that his verification procedures found no other errors.<sup>144</sup>
100. Although the majority of the Unpaid Invoice revenue lacks underlying detail that can be tested, for the limited number of Unpaid Invoices that have sufficient detail, we have identified other instances of double counting, and even triple counting, that Mr. Sharp’s purported verification procedures failed to detect.
101. **Error Type #1: Mr. Sharp’s analysis includes multiple invoices for the same charge to the same party.** For example, the one-page exhibit C-112 on which Mr. Sharp relies shows that there are two invoices ([REDACTED]) The fact that the exact same amount is charged to the same client raises a red flag for potential double counting. We investigated and found this to be the case.
102. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]<sup>147</sup>

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<sup>142</sup> Sharp 2, ¶ 40.

<sup>143</sup> Sharp 2, ¶ 40.

<sup>144</sup> Sharp 2, ¶ 40.

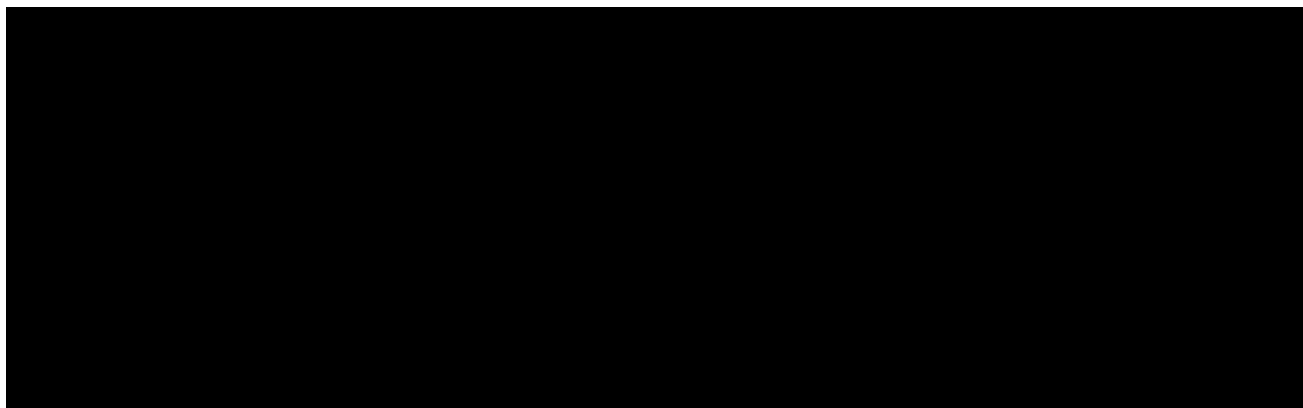
<sup>145</sup> C-356.10, [REDACTED]

<sup>146</sup> C-356.25, [REDACTED]

<sup>147</sup> C-356.10, [REDACTED]  
[REDACTED]

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FIGURE 3: [REDACTED]



103. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] 149

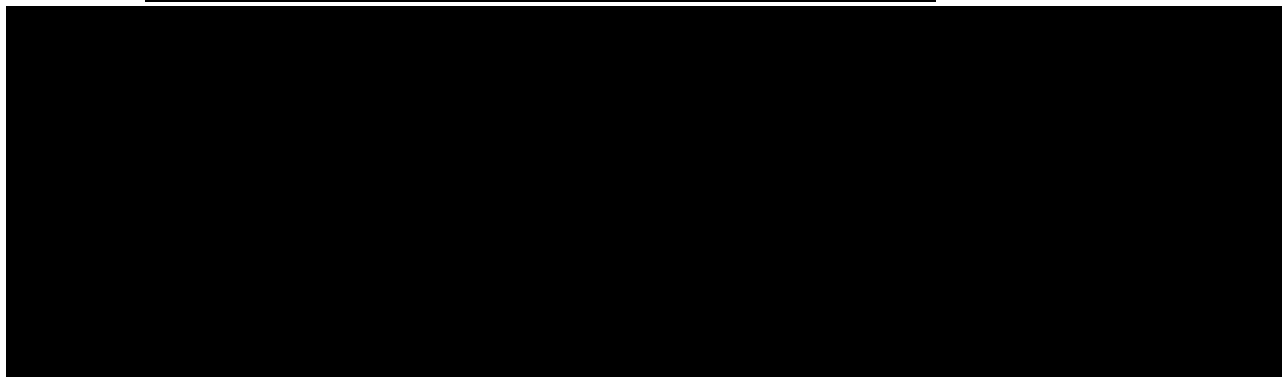
104. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>148</sup> C-356.38, [REDACTED]

<sup>149</sup> C-356.42, [REDACTED]

<sup>150</sup> Mr. Sharp did not provide the underlying tables in which he performed his calculation, but we have been able to replicate these numbers, confirming that he did not correct for this and other errors we describe below. See BR-54, [REDACTED]

FIGURE 4: [REDACTED]<sup>151</sup>

105. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

106. **Error Type #2: Mr. Sharp's analysis includes invoices seeking to collect the same equalization payment from two different parties.** When a licensee joined an exploration group for an area in which the licensee had licensed data, GSI would seek to collect equalization payment it claimed was due from the members of the exploration group that had not licensed the data. [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]<sup>153</sup> Therefore, GSI told [REDACTED] that "[REDACTED]"  
[REDACTED]

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<sup>151</sup> [REDACTED]  
<sup>152</sup> C-112, [REDACTED]  
[REDACTED] See C-356.3, [REDACTED]  
[REDACTED] and C-356.11, [REDACTED]  
[REDACTED]  
<sup>153</sup> C-356.10, [REDACTED]

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**[REDACTED]**<sup>7154</sup> Because GSI billed both the licensee and the members of the exploration group for the equalization payment allegedly owed by the group members, there are instances when the Unpaid Invoice data double count the attempts to collect the same equalization payments from both parties.

107.

108. **Error Type #3: Combines Error Type #1 and Error Type #2 to triple count the same revenue.**

Mr. Sharp triple counts charges related to equalization of some Falklands Islands data by combining the two errors described above. [REDACTED]

160 All three of these invoices representing payment for the same data shared with the same party are incorporated into Mr. Sharp's Unpaid Revenue analysis. As a result, Mr. Sharp's analysis triple counts charges for the

<sup>154</sup> C-356.10, [REDACTED]

<sup>155</sup> C-356.10, [REDACTED]

<sup>156</sup> C-356.13.

157 C-356.11, [REDACTED] and C-356.7, [REDACTED]

158 C-356.37, [REDACTED] and C-356.6, [REDACTED]

159 C-356.37, [REDACTED]

160 C-356.36, [REDACTED]  
[REDACTED]

same data – twice to [REDACTED] and a third time when GSI was seeking indemnification from [REDACTED] for the equalization payment that it believed was due from [REDACTED] but that [REDACTED] had not paid.

109. **Error Type #4: Treating Canadian dollar amounts as US dollar amounts.** [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
<sup>163</sup> Mr. Sharp's purported verification procedures failed to identify this error, so his analysis continues to mistakenly treat the Canadian dollar amounts as if they were in US dollars.

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THERE IS NO FEASIBLE WAY TO FULLY IDENTIFY AND CORRECT SUCH ERRORS

110. We have not attempted to undertake a thorough examination to identify and correct the errors in Mr. Sharp's analysis. Claimants did not provide a native version of Mr. Sharp's model for us to correct, and we are instructed that it was the obligation of the Claimants to demonstrate the reliability of these critical revenue normalization inputs. More importantly, documentation provided by Claimants is not sufficient to identify the full extent of these errors.
111. Given the errors identified from our high-level analysis, we anticipate that a thorough investigation would identify further instances of double (and/or triple) counting of revenue. Based on the supporting materials produced by Claimants, however, a thorough investigation is not possible. Mr. Sharp himself confirms that the vast majority of Unpaid Invoice revenue [REDACTED]<sup>164</sup> comes from invoices that lacked sufficient detail for even his limited (and demonstrably flawed) verification procedures.

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<sup>161</sup> Sharp 1, ¶ 95 (p. 21). We have confirmed that Mr. Sharp's calculation treated all Unpaid Invoices as being denominated in [REDACTED] BR-54, [REDACTED]

<sup>162</sup> C-356.4, [REDACTED] and C-356.5, [REDACTED]  
Emphasis in original.

<sup>163</sup> See, for example, C-356.2, [REDACTED]

<sup>164</sup> Sharp 2, footnote 11.

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SOME OF THE ALLEGED UNPAID INVOICES ARE UNRELATED TO CANADIAN DATA

112. Five Unpaid Invoices that Mr. Sharp includes in his analysis relate solely to [REDACTED] data<sup>165</sup> and are for customers that do not appear to have accessed any data from the Boards.<sup>166</sup>
113. We have been instructed that:
- The Alberta Decisions had no effect on the enforceability of license agreements involving data collected outside of Canada;
  - The Boards have never had access to, and so could not have released, Falkland Islands data;
  - GSI's lawsuits initiated against companies regarding Falklands Islands made no claims related to Canadian seismic data; and
  - Mr. Sharp's claim that including these invoices is justified because "GSI's license agreements are governed by the laws of Alberta, including data licensed in areas outside of Canada"<sup>167</sup> is incorrect.
114. Therefore, we conclude that these three Unpaid Invoices should be excluded from any damages analysis.
115. Furthermore, Paul Einarsson's witness statement suggests that the inclusion of the Falkland Islands invoices was a mistake. He states that "GSI issued a number of unpaid invoices between 2011 and 2016 that totalled [REDACTED] that were for **Seismic Works** provided between 2007 and 2016 (the 'Unpaid Licenses')." <sup>168</sup> This [REDACTED] figure includes the three invoices solely related to the Falkland Islands data. However, Paul Einarsson's definition of "Seismic Works" appears to include only the "[a]pproximately 93% of GSI's entire seismic database is Canadian offshore seismic data that is the subject of this Arbitration (the 'Seismic Works')." <sup>169</sup>

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<sup>165</sup> [REDACTED] (C-356.37, [REDACTED]  
[REDACTED] (C-356.27, [REDACTED]),  
[REDACTED] (C-356.45, [REDACTED] and  
[REDACTED] (C-356.6, [REDACTED] and C-356.36,  
[REDACTED]

<sup>166</sup> **C-111**, List of Seismic Works Disclosed by the Boards. None of these three companies are identified in this exhibit.

<sup>167</sup> Sharp 2, ¶ 67.

<sup>168</sup> **CWS-06**, Witness Statement of Harold Paul Einarsson, ¶ 170(g). Emphasis added.

<sup>169</sup> **CWS-06**, Witness Statement of Harold Paul Einarsson, ¶ 13.

116. This appears to be confirmed by the expert report of Victor Ancira of Troika USA (CER-07, the “Troika Report”). The scope of the Troika Report was to value GSI’s multi-client library for purposes of this proceeding. GSI data acquired in the Falkland Islands and other locations outside of Canada data was explicitly excluded from set of seismic studies valued in the Troika Report.<sup>170</sup>

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MR. SHARP’S ANALYSIS CONTAINS ERRORS IN IMPLEMENTING HIS INSTRUCTIONS  
RELATED TO THE UNPAID INVOICES

117. Mr. Sharp uses the Unpaid Invoices in his calculation of the normalized revenues in a matter that is inconsistent with his instruction. The Unpaid Invoices, according to Paul Einarsson, reflect revenue that GSI should have collected over multiple years. Mr. Sharp states that “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,”<sup>171</sup> a total of five years. However, Paul Einarsson states that “the invoices should be split between the year of the invoice and the **five** preceding years,”<sup>172</sup> a total of six years. [REDACTED]

[REDACTED]

[REDACTED]<sup>173</sup>

118. We explained Mr. Sharp’s error in our first report.<sup>174</sup> Mr. Sharp does not dispute that he made this error, but declines to correct it because: (1) he believes that the difference is immaterial to his conclusions; and (2) the allocation is an “estimated approximation” based on Paul Einarsson’s judgment that cannot be reliably assessed.<sup>175</sup> In addition, he implies in a footnote that his approach is conservative and would lower damages, but he provides no supporting detail or analysis.<sup>176</sup>
119. We agree that the 6-year allocation identified by Paul Einarsson is unsupported and cannot be tested. However, we disagree with Mr. Sharp’s claim that the error would have an immaterial impact on damages – a calculation that Mr. Sharp does not present. We have conducted a

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<sup>170</sup> CER-07, Expert Report of Victor Ancira, ¶ 12.

<sup>171</sup> Sharp 1, ¶ 94 (p. 21). Emphasis added.

<sup>172</sup> CWS-06, Witness Statement of Harold Paul Einarsson, ¶ 170(i). Emphasis added.

<sup>173</sup> BR-54, [REDACTED]

<sup>174</sup> Brattle 1, ¶ 82.

<sup>175</sup> Sharp 2, ¶ 68.

<sup>176</sup> Sharp 2, ¶ 68 and footnote 43.



calculation that shows the impact of Mr. Sharp's allocation error. Using the 5-year allocation,

[REDACTED]<sup>177</sup>

However, applying Mr. Sharp's same method, but using the 6-year allocation he was instructed to use, the [REDACTED]<sup>178</sup> This correction therefore would result in a significant reduction in Mr. Sharp's estimated 2012 normalized revenues. This effect of this error is magnified in Mr. Sharp's analysis, because the 2012 normalized revenues are the base year from which he forecasts normalized revenues from 2013 to his Valuation Dates.<sup>179</sup> [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]<sup>180</sup>

### VIII.B.2.b. Mr. Sharp's Lost Revenue Due to Board Access Is Unreliable

120. Mr. Sharp was instructed to assume that each instance in which a private entity accessed GSI data through the Boards would have instead generated a GSI licensing sale but for Respondent's alleged breach. Mr. Sharp took as an instruction the lost licensing revenue for 2000 to 2012. In 2012, this lost revenue comprised [REDACTED]<sup>181</sup> As with the Unpaid Invoices, Mr. Sharp purports in his second report to have conducted certain verification procedures. These analyses were not provided with that report.
121. Even if the data on lost licensing revenue for Board Access from C-111 that Mr. Sharp was instructed to use was reliable, the normalization adjustment made by Mr. Sharp was not. As discussed in paragraphs 57-58, the assumption that each Board Access by a private entity would instead have been a licensing sale is inconsistent with a basic principle of economics, which Mr. Sharp himself recognizes. This flaw is compounded by the unreliability of the data on which he relies:
  - It contains known errors that Mr. Sharp did not correct.
  - While Mr. Sharp claims that his verification procedures confirmed that the prices applied in calculating lost revenue from Board Access were correct, the prices are often wrong.

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<sup>177</sup> Sharp 1, ¶ 96 (p. 21) and Schedule B2.1.

<sup>178</sup> See BR-54, [REDACTED]

<sup>179</sup> See, for example, Sharp 1, Schedule B2.1.

<sup>180</sup> BR-54, [REDACTED]

<sup>181</sup> Sharp 1, Schedule B2.1.

- It contains charges for the same customers multiple times for the same Board Data.
- It applies unreasonable and unsubstantiated revenue multiples.

122. These errors cause Mr. Sharp to overstate historical normalized revenues. For reasons discussed in paragraph 87 above, they also result in understated expenses, compounding the overstatement of damages. The shortcomings associated with Mr. Sharp's estimate of lost revenues from Board Access cannot be fully corrected given the limited information available from GSI.

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#### MR. SHARP HAS NOT CORRECTED HIS CALCULATION FOR KNOWN ERRORS

123. In our first report, we raised the concern that Mr. Sharp neglected to check whether any customers that accessed data through the Boards might have later decided to license the data, resulting in double counting of the same revenues.<sup>182</sup> Additionally, we noted an instance in which a customer purportedly would have licensed a particular dataset even before that dataset was created.<sup>183</sup>
124. Mr. Sharp admits both of these errors. However, he declines to correct his calculation, arguing that these are isolated instances.<sup>184</sup> In our opinion, correcting these (or any) known errors is appropriate. We cannot do so, because Mr. Sharp did not provide a native version of his damages model.<sup>185</sup> More importantly, Mr. Sharp misses a fundamental point of our critique – these crucial inputs into his analysis have not been tested or verified, and clearly contain errors. That makes them unreliable.

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#### MR. SHARP ESTIMATES LOST LICENSING REVENUE USING INCORRECT PRICES

125. Mr. Sharp's second report describes the verification procedures used for the assumed lost revenues from Board Access as follows: "For the purposes of this PwC Reply Report, we compared pricing as reflected in our normalization adjustment to underlying GSI price lists and noted no exceptions."<sup>186</sup> Mr. Sharp has not included this analysis in his report. As discussed

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<sup>182</sup> Brattle 1, ¶ 69.

<sup>183</sup> Brattle 1, ¶ 71.

<sup>184</sup> Sharp 2, ¶¶ 49 and 53.

<sup>185</sup> We have attempted to replicate Mr. Sharp's analysis. Some aspects can be replicated, but we have been unable to replicate others.

<sup>186</sup> Sharp 2, ¶ 46, emphasis added.

below, however, the licensing values in C-111 are not the correct values to use in estimating lost revenues from 2000 to 2012, because they fail to reflect the actual prices that GSI was charging at the time that these customers are assumed to have licensed the data in Mr. Sharp's but-for scenario.

126. We have tested the implied pricing for the data series to which [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]
127. According to GSI's website, this data series covers 800 square km, implying a price of [REDACTED]<sup>187</sup> [REDACTED]  
[REDACTED]<sup>188</sup> However, that is the wrong price list to use. Mr. Sharp's analysis is trying to estimate the revenues that GSI would have earned if each customer had licensed the data rather than accessing it through the Boards. He assumes that the license would have been acquired at the time of Board Access, and his normalization adjustments assume that GSI would have received the licensing revenue in that same year.<sup>189</sup> Thus, for the purposes of Mr. Sharp's exercise, the licensing value should have reflected the pricing at the date of Board Access – a license that is assumed to have been sold in 2000 would be priced based on the price list from 2000, not 2013. [REDACTED]  
[REDACTED]<sup>190</sup> In other words, Mr. Sharp applied a price more than *seven times* the contemporaneous price.
128. [REDACTED]  
Figure 5 compares the 2013 licensing fee assumed in Mr. Sharp's analysis (from C-111) to the fee shown on GSI's price list as of the date of Board Access. In every case, [REDACTED]  
[REDACTED]  
[REDACTED]

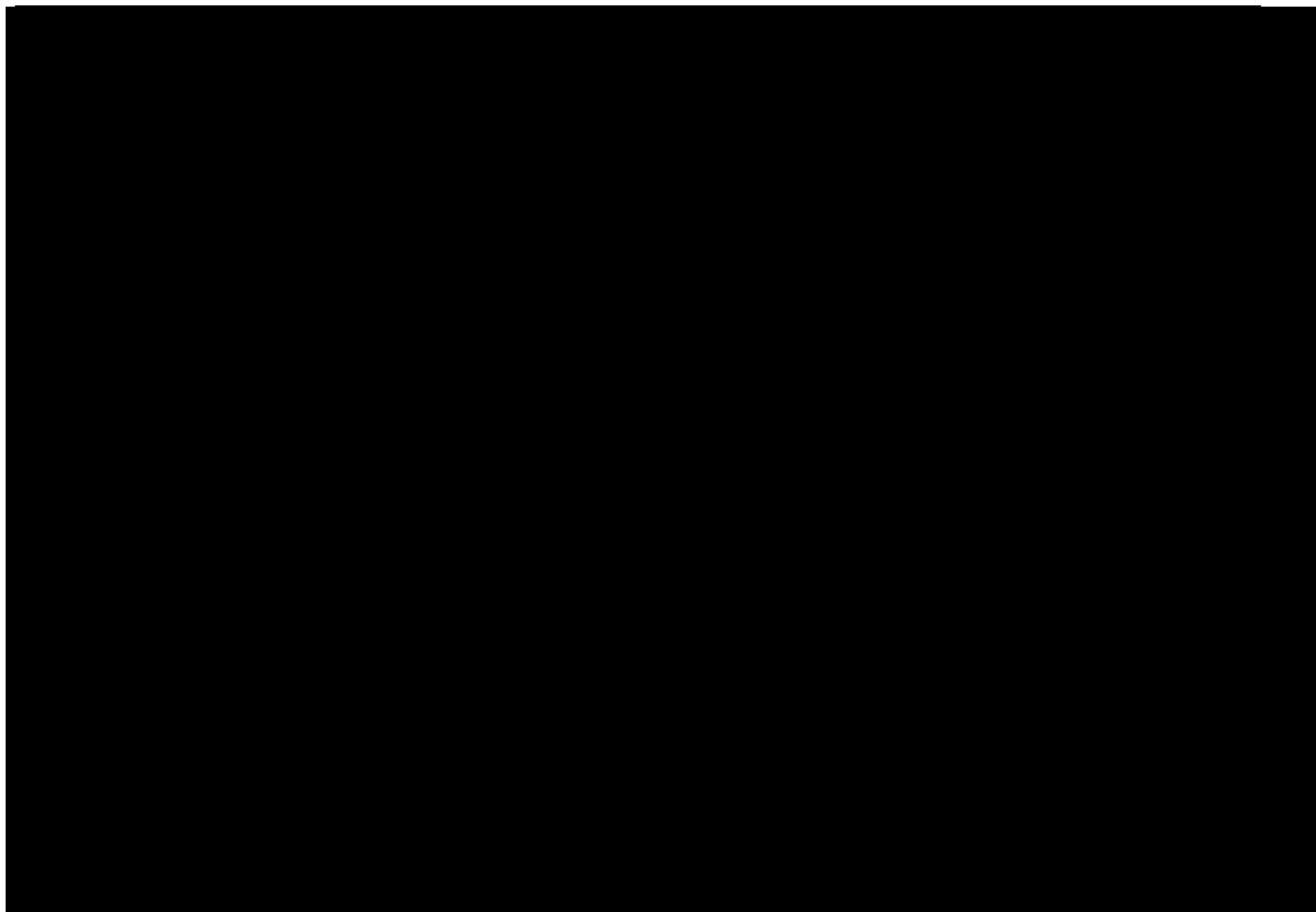
<sup>187</sup> **BR-60**, Geophysical Service Incorporated, Acquired Data, last accessed 29 August 2024. The price is calculated as [REDACTED] divided by 800 square km.

<sup>188</sup> **C-558.60**, [REDACTED]

<sup>189</sup> Sharp 1, ¶ 90 (p. 19). Mr. Sharp assumes the revenue adjusted for his assumed multiplier begins in the year of Board Access is spread over a three-year period.

<sup>190</sup> The price list showed a price of [REDACTED] (**C-357.3**, [REDACTED]  
[REDACTED] **C-114**, Historical Foreign Exchange Rates, C-114\_0005 shows that the exchange rate on that day was C\$1.47/USD. [REDACTED]

FIGURE 5:



129. The implications of using the 2013 price rather than the price contemporaneous with Board Access are substantial, as shown in Figure 6. Mr. Sharp's analysis would calculate that GSI lost revenues of approximately [REDACTED] from [REDACTED] by using the 2013 prices and Mr. Sharp's assumed multipliers.<sup>192</sup> Using the prices from price lists contemporaneous with the date of [REDACTED] and Mr. Sharp's multipliers would result in an estimate of lost revenue of [REDACTED] about [REDACTED]

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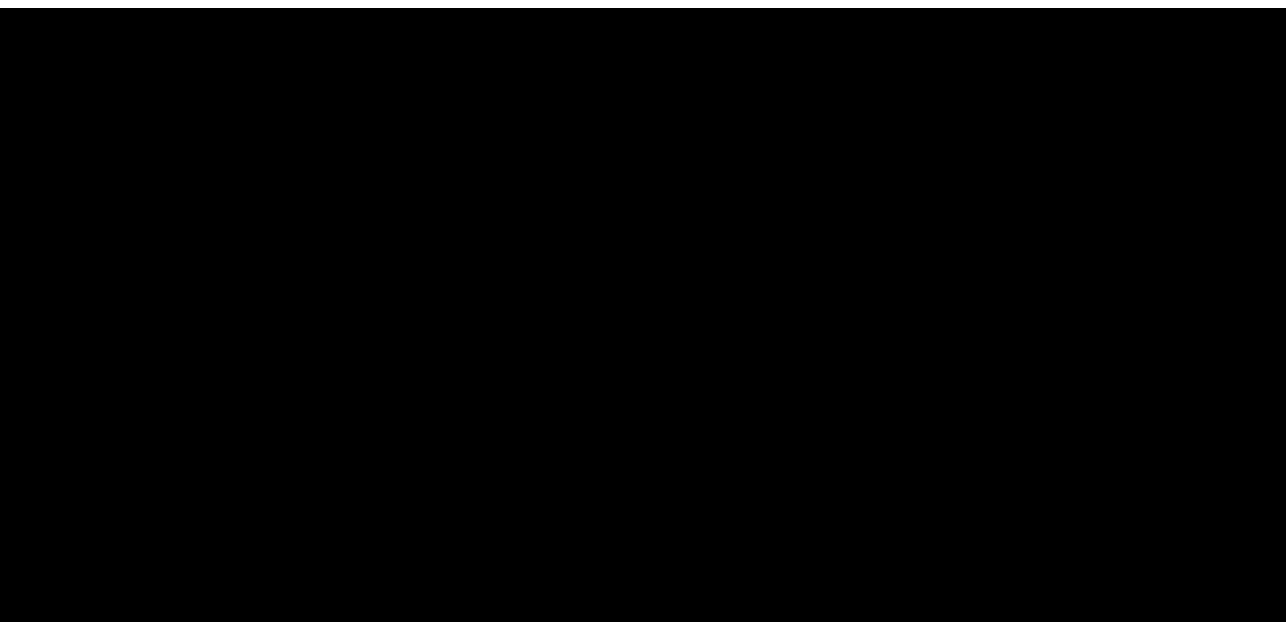
<sup>191</sup> BR-54, [REDACTED]

<sup>192</sup> Mr. Sharp did not provide a working version of his analysis. We have attempted to, but been unable to replicate his analysis exactly, so our figures may deviate slightly from those that he would calculate.

FIGURE 6:

[REDACTED]

193



Sources and Notes:

[B]: See [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

130. The above analysis values the data in electronic form, as it would be licensed from GSI. We note, however, that GSI itself also placed a value on paper copies, such as would be available from the Boards. That value, not mentioned by Mr. Sharp, was only a fraction of the license cost [REDACTED] in the early 2000's.<sup>194</sup> That is consistent with the observation in our first report that what disclosure under the Regulatory Regime generally made data less valuable all else equal.<sup>195</sup>

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<sup>193</sup> BR-54, [REDACTED]

<sup>194</sup> See BR-61, [REDACTED]

and BR-62, [REDACTED]

<sup>195</sup> Brattle 1, ¶ 66.

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131. GSI attempted the same approach to prices in its litigation against customers as Mr. Sharp uses. GSI argued that the licensing agreement between GSI and Total prohibited Total from accessing data from the Boards. The Court found that Total had violated this prohibition by accessing Board data in 2001 and 2006 and found that GSI's use of the 2013 price list to determine the license fee due was inappropriate:

*In determining damages, in order to interpret the contractual terms, the Court must determine what the "current" licensing fee is. Although the Plaintiff argued that this should be the licensing fee set out in the 2013 schedule, being the date of the discovery of the breach (or trial, as there was not change in the price list after 2013), I do not find that to be appropriate. The breach of the contracts here was in 2001 and 2006.<sup>196</sup>*

132. We have confirmed that this mispricing is widespread. We examined the 10 highest-valued price data series shown on C-111 and found that all but one (the East Coast 1972 data) use the prices effective in [REDACTED] for the accessed data. Paul Einarsson also appears to confirm that the list prices underlying C-111 were from [REDACTED] rather than the date of Board Access.<sup>197</sup>
133. Applying the prices that became effective in [REDACTED] for licensing that allegedly would have occurred in earlier years is economically unreasonable. If one is to assume that each Board Access would instead have been a license, absent the alleged breaches (an unreasonable assumption for reasons discussed in paragraphs 57-58), the license revenue should reflect prices as of the Board Access date. The later prices were increased substantially while GSI engaged in litigation with its customers. For example, the [REDACTED] was [REDACTED]  
[REDACTED]  
[REDACTED]<sup>198</sup> This is a substantial increase from the [REDACTED] charged in [REDACTED] and from the price of [REDACTED]<sup>199</sup> [REDACTED]

<sup>196</sup> C-286, Geophysical Service Incorporated v. Total SA, 2020 ABQB 730, Reasons for Judgment, ¶ 100. Emphasis added.

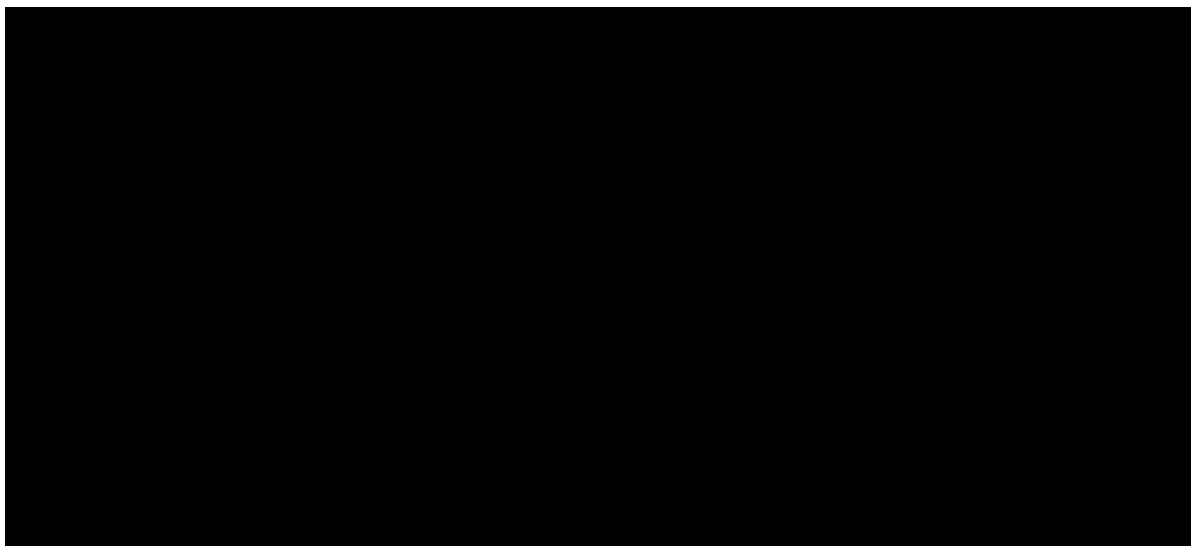
<sup>197</sup> He states that "In Exhibit C-111, GSI summarized invoices that it created based upon GSI's most current price lists, [REDACTED]" CWS-12, Witness Statement of Harold Paul Einarsson, ¶ 141, emphasis added.

<sup>198</sup> We compare prices for volumes in excess of 10,001 km to compare on a consistent basis. C-558.60, [REDACTED]  
[REDACTED]

<sup>199</sup> C-357.3, [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]



FIGURE 7: [REDACTED] <sup>205</sup>



135. The apparent cause of this error is that C-111 [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>205</sup> BR-63, [REDACTED].

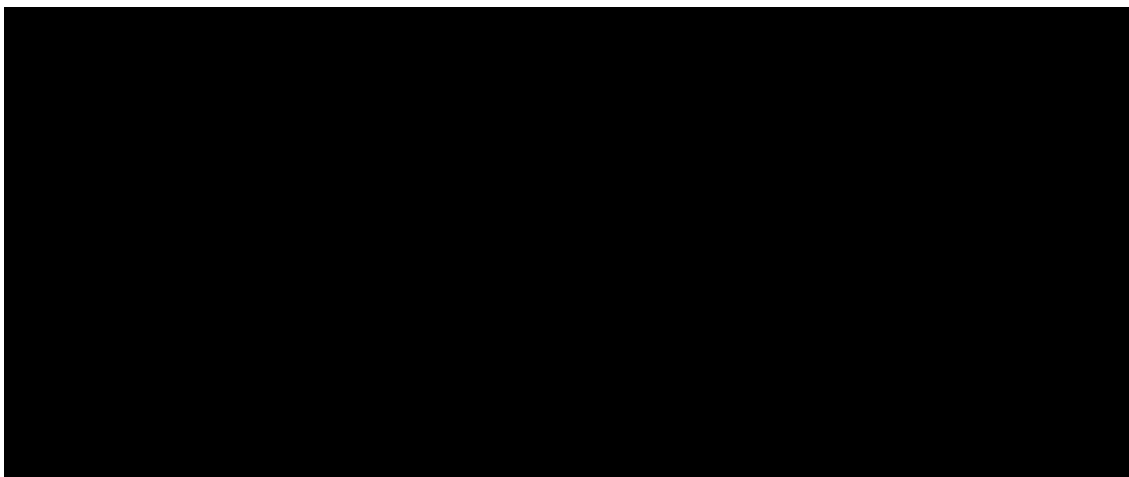
<sup>206</sup> Claimants' value appears to calculate the licensing value using only whole km.



FIGURE 8:

[REDACTED]

<sup>207</sup>



Sources and Notes:

[A] & [D]: Workpaper 28.

[B] & [E]: Workpaper 28.

[REDACTED]

[C]: [A] x [B].

[F]: [D] x [E].

136. We identified these material errors by examining only the 10 highest valued GSI data series out of more than 80 different data series shown in C-111. We anticipate that a full review of all GSI time series would reveal similar errors in the many other data series contained in C-111.

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#### MR. SHARP'S LOST REVENUE FAILS TO REFLECT VOLUME DISCOUNTS<sup>208</sup>

137. GSI price lists often contain tiered pricing based on the quantity of data that a customer licenses. [REDACTED]

[REDACTED]<sup>209</sup> Mr. Sharp recognizes that such discounts apply, but neither C-111 nor Mr. Sharp account for them properly.<sup>210</sup>

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<sup>207</sup>

BR-54, [REDACTED]

<sup>208</sup>

Rejoinder Expert Report of Robert Hobbs, ¶¶ 62 and 64. Mr. Sharp states that volume discounts are not reflected in his "buf-for" revenues; however, Mr. Hobbs affirms that volume discounts are a common practice when licensing multiple surveys and that, in fact GSI offered volume discounts. Rejoinder Expert Report of Robert Hobbs, ¶ 63.

<sup>209</sup>

C-558.59, [REDACTED]

<sup>210</sup>

Sharp 2, ¶ 47.

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138. C-111 does account for [REDACTED] as discussed above). For example, [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] C-111 calculates the license fee in accordance with the tiered pricing structure for these datasets too. In total, C-111 charges [REDACTED] and Mr. Sharp adopts this value.
139. However, GSI offered volume discounts across datasets too. This can be seen in the Unpaid Invoice sent to [REDACTED] on [REDACTED].<sup>212</sup> The tiered pricing is not applied to the total km acquired in each of the individual series, but to the total km acquired in a particular data category. In total, the [REDACTED] request accessed [REDACTED] If [REDACTED] had licensed this data rather than accessing from the Boards, it would have been charged [REDACTED] for the first [REDACTED] and [REDACTED] for the [REDACTED]. Because C-111 does not capture these discounts, it overstates the revenue that GSI would have earned from licensing this [REDACTED] Rather than the [REDACTED] (before multiplier) in licensing fees used in C-111, this data could have been licensed in [REDACTED] to benefit from the volume discounts shown on GSI price lists.<sup>213</sup> However, even this license fee is significantly overstated, because [REDACTED] accessed this data.<sup>214</sup>
140. It does not appear that Mr. Sharp's verification procedures were sufficiently robust to check for this type of error. This problem appears to be widespread, as many of GSI's datasets bundle together data from a particular vintage and area. For example, GSI has many different datasets from the [REDACTED]

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<sup>211</sup> BR-54, [REDACTED]

<sup>212</sup> [REDACTED]  
[REDACTED]  
[REDACTED] See C-356.10, [REDACTED]  
[REDACTED]

<sup>213</sup> BR-54, [REDACTED]

<sup>214</sup> It does not appear that GSI provided a price list for Baffin Bay data as of June 2002. [REDACTED] C-558.27, [REDACTED]

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██████████<sup>215</sup> and many parties sought Board Access to multiple datasets in this group at the same time.<sup>216</sup>

141. Mr. Sharp also argues that concerns related to license discounts arose in years prior to 2008, after which discounts were less common, and so are less important to his determination of maintainable revenues for his valuations of GSI.<sup>217</sup> However, ██████████  
██████████ and Mr. Sharp's high-case but-for revenue is driven primarily by his normalized revenues prior to 2008.<sup>218</sup>

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MR. SHARP'S LOST REVENUE FROM BOARD ACCESSES CONTAINS DOUBLE COUNTING

142. C-111 ██████████  
██████████ By adopting the data in C-111, Mr. Sharp's analysis ██████████  
██████████
143. Consider the example of ██████████  
██████████  
██████████  
██████████  
██████████
144. ██████████  
██████████  
██████████  
██████████  
██████████  
██████████  
██████████  
██████████

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<sup>215</sup> C-558.60, ██████████

<sup>216</sup> C-111, List of Seismic Works Disclosed by the Boards. See, e.g., ██████████  
██████████

<sup>217</sup> Sharp 2, ¶ 47.

<sup>218</sup> Sharp 1, Schedule B2.1. ██████████ of revenues occurred before 2008.

<sup>219</sup> C-111, List of Seismic Works Disclosed by the Boards. ██████████

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[REDACTED]  
[REDACTED]<sup>220</sup>

FIGURE 9: [REDACTED]  
[REDACTED]<sup>221</sup>

Submitter	Requesting Company	Date of Request	AREA	Notes	REF#	Value
Petro Canada	Chevron	19-Jun-2012	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

145. There are other instances of this problem.<sup>222</sup> For example, in the case of [REDACTED] Mr. Sharp's analysis estimates [REDACTED] in forgone license fees. After removing this double and triple counting, this figure declines by more than half to [REDACTED]<sup>223</sup>

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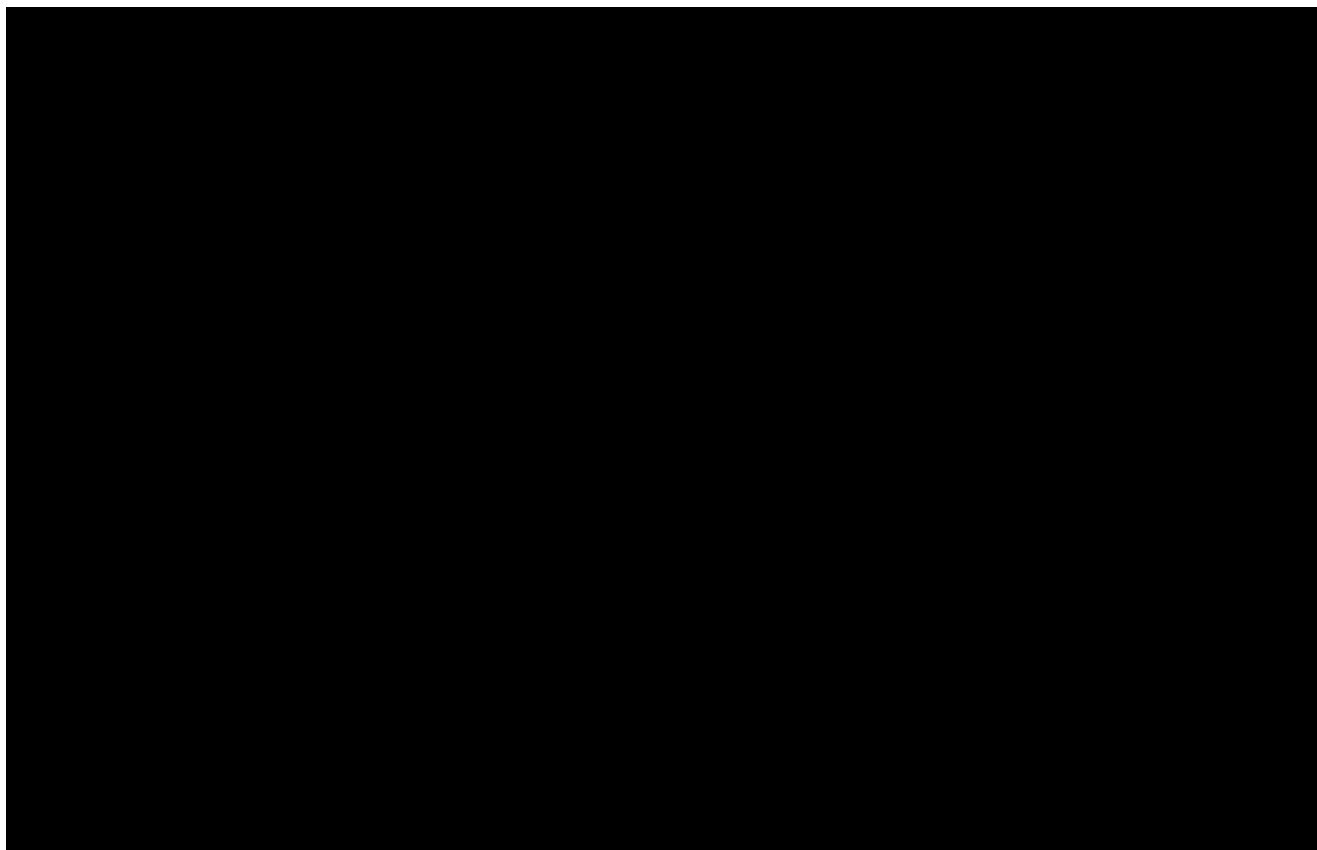
<sup>220</sup> [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] C-356.15, [REDACTED]  
[REDACTED]

<sup>221</sup> C-111, List of Seismic Works Disclosed by the Boards, C-111\_0004. The excerpt excludes certain other columns not relevant to this concern.

<sup>222</sup> [REDACTED] See [REDACTED]  
[REDACTED]

<sup>223</sup> BR-54, [REDACTED]

FIGURE 10: [REDACTED] 224



146. This problem is not unique to [REDACTED]. The same problem arises with other existing or potential GSI customers.<sup>225</sup> The effect of this double or triple counting is substantial.

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#### MR. SHARP'S ASSUMED MULTIPLIERS LACK SUPPORT

147. Mr. Sharp was instructed to apply certain multipliers to the license fee that he assumes would have been granted for each Board Access.<sup>226</sup> The argument is that they reflect the potential generation of future transfer or equalization fees on top of the but-for licensing fees.<sup>227</sup> We explained that these assumed multipliers lacked any analytical or documentary support, and

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<sup>224</sup> BR-54, [REDACTED]

<sup>225</sup> For example, see [REDACTED] C-111, [REDACTED]  
[REDACTED]

<sup>226</sup> Sharp 1, ¶ 85 (p. 19). Sharp 1 did not disclose the multipliers used for each company. Sharp 2 states his understanding that these multipliers were made available to us prior to the filing of this report. (Sharp 2, ¶ 60). This is incorrect, the multipliers were provided to us during the document production phase. We have updated BR-12, [REDACTED] See BR-54, [REDACTED]

<sup>227</sup> CWS-06, Witness Statement of Harold Paul Einarsson, ¶ 170(c).

their reasonableness could not be tested.<sup>228</sup> Sharp 2 continues to assume the multipliers provided by Paul Einarsson without testing.

148. Importantly, the appropriate multiple is a testable hypothesis. GSI could have analyzed each instance of initial licensing for each dataset and determined how much additional revenue was earned relating to that same licensing instance in the future. This analysis was not done by Mr. Sharp or Paul Einarsson.
149. Paul Einarsson states that his multipliers were supported by data on permits issued by CNLOPB for exploration and development activities. For each such CNLOPB license, Paul Einarsson says there are more than three interest holders.<sup>229</sup> However, this analysis is incomplete because not every data series licensed by GSI will lead to exploration or development activities. Moreover, as discussed in paragraphs 88-97, it is based on GSI's assertions about when potential equalization or transfer fees would be paid, which have been rejected by courts in some cases and which have been widely disputed by GSI's customers.
150. We cannot determine whether Paul Einarsson's multiplier assumptions are unreasonable, but nor can the information in the record be used to demonstrate that there are reasonable. This raises concerns about the reliability of Mr. Sharp's analysis, and the use of multipliers on top of the base license fee is responsible for more than [REDACTED] of Mr. Sharp's normalized revenues from 2000 to 2012.<sup>230</sup> Such a crucial assumption should have been tested, but Claimant has neither tested it nor provided the information necessary to test it.

### **VIII.B.3.Mr. Sharp's Forecast of "Maintainable Revenues" Is Unreliable**

151. Mr. Sharp forecasts GSI's "maintainable revenues" starting with the 2012 normalized revenues in US dollars and then projecting those US-dollar revenues forward based on the change in global oil rig count. In our first report, we made the following critiques of Mr. Sharp's forecast:

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<sup>228</sup> Brattle 1, ¶ 68.

<sup>229</sup> CWS-12, Witness Statement of Harold Paul Einarsson, ¶ 164.

<sup>230</sup> BR-54, [REDACTED]

## Rejoinder Expert Report of The Brattle Group

- Mr. Sharp's projection bears no relationship to what was actually happening in Canadian oil and gas markets using any of his four chosen benchmarks.<sup>231</sup>
- Canada is a very small fraction of global offshore rig count, which can change due to factors that have no relationship to the demand for Canadian seismic data, such as a large new oil or gas discoveries elsewhere in the world.<sup>232</sup> Given such intervening factors, one cannot assume that correlation means causation, as Mr. Sharp does.<sup>233</sup>
- Mr. Sharp's forecast assumes GSI sales would have significantly outperformed those of the global offshore seismic industry.<sup>234</sup>
- Mr. Sharp's forecast of 2017 maintainable revenues to use in his capitalized cash flow ("CCF") is highly dependent on the year to which he anchors his forecast. By anchoring to 2012 normalized revenues, he forecasts 2017 revenues of [REDACTED]. However, if he had anchored his forecast to 2008, the last year he deemed relevant to forecasting costs,<sup>235</sup> projected 2017 revenues would have been only [REDACTED].<sup>236</sup>
- Mr. Sharp's projected 2012 normalized revenues, when projected to 2017, are below the "low" end revenue forecast used in his analysis.<sup>237</sup>
- Mr. Sharp's assumed low and high estimates of maintainable revenues are biased upwards. The high case of [REDACTED] is consistent with his measure of the highest five-years of his estimated normalized revenues ([REDACTED]), but his low case of [REDACTED] is far above the lowest five years of revenue ([REDACTED]).<sup>238</sup>

152. We therefore concluded that the maintainable revenue forecast used in Mr. Sharp's valuation was unreliable.

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<sup>231</sup> The highest correlation between Mr. Sharp's normalized US dollar revenues from 2000 to 2012 and any of Mr. Sharp's four measures of activity in the Canadian oil & gas sector is only 0.13. (Sharp 1, ¶ 106 (p. 23)). A correlation of zero suggests no relationship, while a correlation of 1 suggests a perfect relationship, so 0.13 suggests virtually no relationship.

<sup>232</sup> Brattle 1, ¶ 97.

<sup>233</sup> Brattle 1, ¶¶ 97-99.

<sup>234</sup> Brattle 1, ¶ 100.

<sup>235</sup> Sharp 1, ¶¶ 111 and 115 (p. 24).

<sup>236</sup> Brattle 1, ¶ 101.

<sup>237</sup> Brattle 1, ¶ 102.

<sup>238</sup> Brattle 1, ¶ 103. See also Sharp 1, Schedule B2.1.

### VIII.B.3.a. Mr. Sharp Correctly Points Out an Error in Our Report

153. Figure 10 of our first report shows that projecting 2012 normalized revenues forward based on global rig count would result in 2017 normalized revenues below the low end of Mr. Sharp's range of "maintainable revenues."<sup>239</sup> Mr. Sharp claims that we failed to convert from USD to CAD.<sup>240</sup> He is correct, and we withdraw this point. None of our other critiques of Mr. Sharp's assumed maintainable revenues are reliant on this finding and therefore our remaining critiques stand.

### VIII.B.3.b. Mr. Sharp's Assumed Relationship Between Global Offshore Rig Count and GSI Revenue Is Unsupported

154. Mr. Sharp dismisses our critique of his use of the global rig count by arguing that regression is an accepted tool in international arbitration.<sup>241</sup> To be clear, we do not dispute that regression can be a reliable economic tool. Our point is that Mr. Sharp has used it inappropriately. Mr. Sharp looks for relationships between his estimate of normalized revenues and each of 16 different data series.<sup>242</sup> When one looks for correlations across many different variables, it is more likely that one will find a correlation, even where no causal relationship exists. This is akin to what is known as "data mining."
155. Mr. Sharp assumes that GSI's normalized revenues changed in direct proportion to the change in the global offshore drilling rig count in the following year. For example, between 2017 and 2018, the global offshore rig count increased by 23.4%.<sup>243</sup> Mr. Sharp therefore assumes that GSI's normalized revenue would have increased by that same 23.4% from 2016 to 2017.<sup>244</sup> As we have noted, there are many factors that could cause changes in the worldwide offshore rig counts that would have no impact on GSI's normalized revenues.
156. The alleged link between global rig count and GSI's revenues can be tested. If the changes in the global offshore rig count correlate with revenues from GSI's sales of offshore seismic data, one would also expect to see a strong relationship between the global offshore rig count and global revenues for offshore seismic data. Figure 11 compares changes in global offshore rig

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<sup>239</sup> Brattle 1, ¶ 102.

<sup>240</sup> Sharp 2, ¶¶ 84-91.

<sup>241</sup> Sharp 2, ¶¶ 74-76.

<sup>242</sup> Sharp 1, ¶ 106 (p. 23). Mr. Sharp looks at 8 indicators, each in two different currencies.

<sup>243</sup> C-117, Research regarding historical industry growth indicators used in R-squared analysis, C-117\_0022.

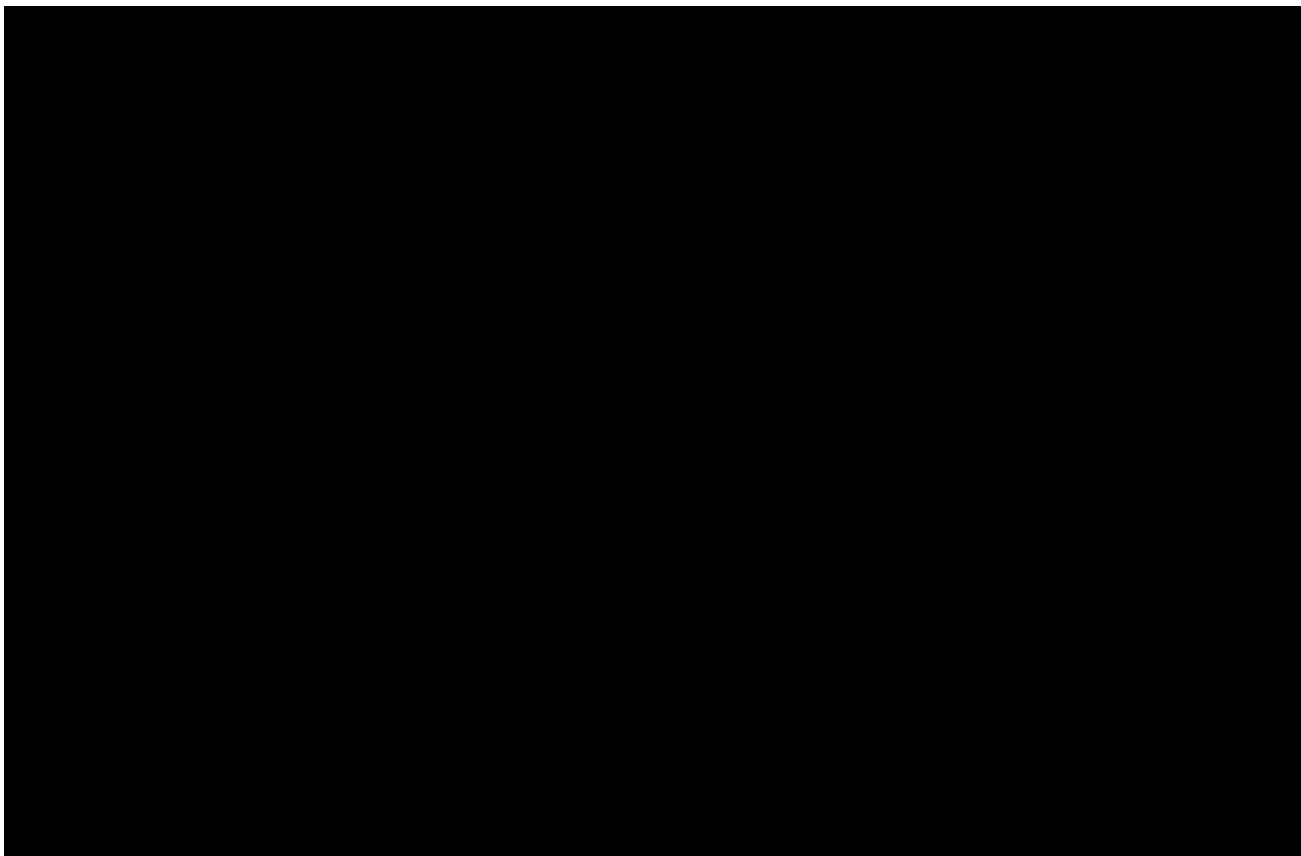
<sup>244</sup> Sharp 1, Schedule B2.1.



count in one year compared to the change in global offshore seismic data revenue in the prior year (the same one-year lag modeled by Mr. Sharp). It shows that there is virtually no statistical relationship whatsoever. If this relationship does not exist when comparing global rig counts to global offshore seismic revenue, there is no logical basis to assume that changes in global rig counts would explain changes in GSI's revenues but for the alleged breaches. Mr. Sharp's result is spurious.

FIGURE 11:

245



157. This lack of a statistical relationship makes sense. Mr. Sharp's assumption that changes in seismic spending by oil & gas companies are highly correlated to the change in the global rig count in the following year does not hold in practice. As discussed by Hobbs, this lack of correlation is explained by two factors. First, offshore rigs are used for both exploration and production activities. Production activities do not require recent investments in seismic data because the exploration phase occurred many years earlier. Second, for exploration activities

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<sup>245</sup>

BR-54,

E&P companies often delay drilling an exploration well for many years after the government grants a concession. Consequently, the purchase of seismic data typically happened several years before the rigs are deployed.<sup>246</sup> Given this lack of correlation, the fact that Mr. Sharp found a moderate r-squared between these variables is the result of spurious correlation.

158. Furthermore, Mr. Sharp misapplies regression as a tool. The source cited by Mr. Sharp himself confirms that regression analysis describes the statistical relationship between an independent variable (or variables) and dependent variable in the form of a specific equation.<sup>247</sup> Where one conducts regression analysis, the output is a specific equation such as  $X = A + (B \times Y)$  with a particular level of statistical significance that captures the statistical relationship where:
- X is the dependent variable that one is trying to estimate – in Mr. Sharp’s regression this is GSI’s normalized revenue in each year after 2012;
  - Y is the independent variable being used to predict the dependent variable – in Mr. Sharp’s regression this is the global offshore rig count in the following year;
  - A is the constant, which is the value for the dependent variable (X) when the independent variable (Y) is equal to zero – this is the point GSI revenue that would be predicted by the statistical relationship if the global offshore rig count were zero; and
  - B is the coefficient that reflects the slope of the predicted regression line – in this case it reflects the added (reduced) GSI revenue predicted for each incremental (decremental) rig in the global offshore rig count.
159. Mr. Sharp fails to apply the regression equation, instead assuming that the percent change in normalized revenues is exactly equal to the percent change in global rig count. Even if it were reasonable to forecast GSI’s normalized revenue based on global rig count, Mr. Sharp misapplies the regression analysis because he ignores the specific underlying statistical relationship between these two variables as reflected in the regression equation. In short, Mr. Sharp claims that the r-squared associated with the regression shows a good statistical relationship between GSI’s revenues and the global offshore rig count, but when he attempts to forecast GSI’s revenues, his approach ignores the predicted statistical relationship altogether.
160. Had Mr. Sharp examined the actual regression analysis underlying his assumed relationship (which is not presented in his reports), he would have understood that his assumed statistical

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<sup>246</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 72.

<sup>247</sup> **C-362**, The Use of Econometric and Statistical Analysis in Damages, Jennifer Vanderhart, Steven Schwartz, and Richard Brady; published in the Global Arbitration Review, C-362\_0003.

relationship made no economic sense. While Mr. Sharp did not present his regression analysis, we have replicated Mr. Sharp's r-squared between GSI's USD revenues and the global offshore rig count. Once we replicated his result, we determined the regression formula underlying his relationship between GSI normalized revenues and global offshore rig counts. The formula predicts the GSI revenue in year  $t$  as the sum of *negative* [REDACTED] (the constant) plus [REDACTED] (the coefficient) multiplied by the global rig count in the next year ( $t + 1$ ), as shown below:<sup>248</sup>

$$GSI\ Revenue_t = negative\ [REDACTED] + [REDACTED] \times Global\ Rig\ Count_{t+1}$$

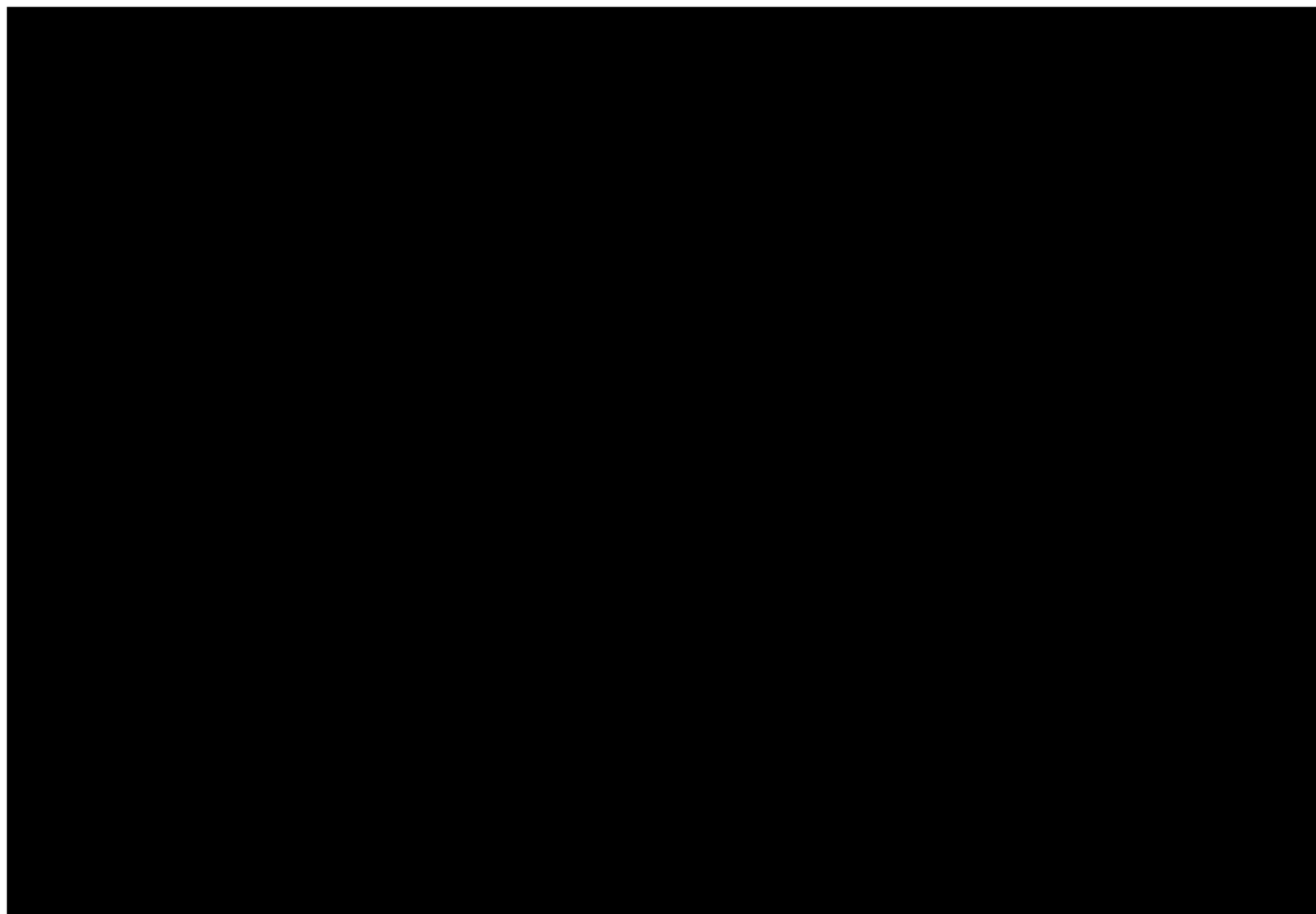
161. Figure 12 compares the normalized GSI revenue derived by Mr. Sharp in each year from 2000 to 2017 to the normalized GSI revenue predicted by the regression equation above. Following 2013, when global rig counts begin to plummet, Mr. Sharp's assumed relationship produces non-sensical results. In 2014, the relationship that Mr. Sharp believes exists between GSI's normalized revenues and global rig count implies that *revenues* would fall from more than US\$150 million in 2013 to become *negative in every year thereafter*. The non-sensical results of applying this regression again demonstrate that Mr. Sharp's r-squared is the result of spurious correlation.

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<sup>248</sup> BR-54, [REDACTED]

FIGURE 12:

249



162. The unreliability of Mr. Sharp's forecast is also apparent when compared to the revenue generated by the global offshore seismic industry. As shown in Figure 13 below, global revenue for offshore seismic dropped by 57% between 2012 (the year Mr. Sharp begins his projection) and his 2017 Valuation Date. Mr. Sharp's forecast, however, assumes that GSI significantly outperforms the industry as a whole – with revenue dropping by only 30% over this same period. This makes no economic sense, because Mr. Sharp's forecast method is premised on the assumption that GSI would follow the performance of the global offshore rig count. As discussed by Mr. Hobbs, there is no practical basis to assume that GSI would not follow the same trends as the entire seismic industry, but instead outperform the global seismic industry revenues.<sup>250</sup>

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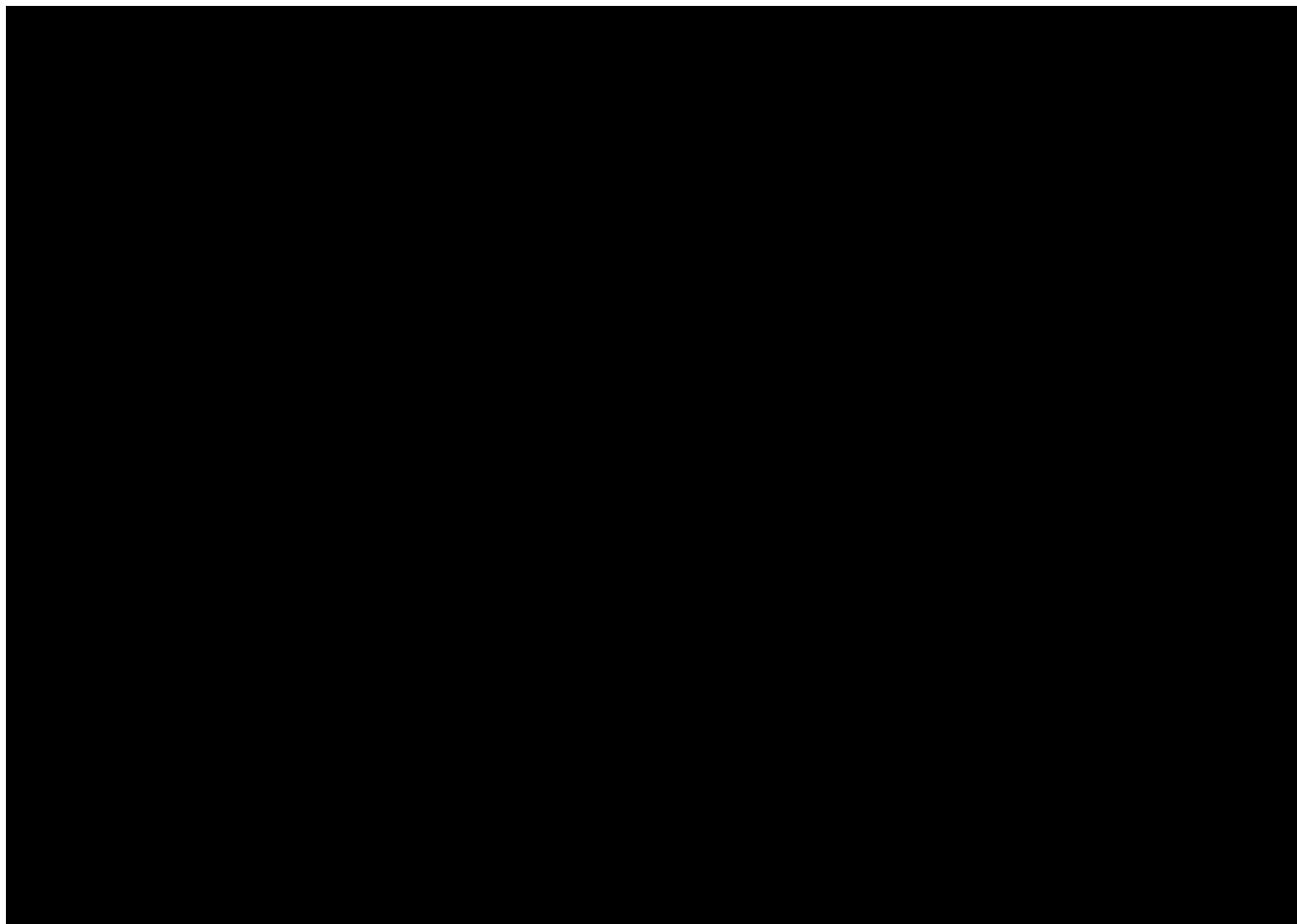
<sup>249</sup> BR-54, [REDACTED]

<sup>250</sup> Rejoinder Expert Report of Robert Hobbs, ¶¶ 28 and 71.

FIGURE 13:



251



### VIII.B.3.c.GSI's Normalized Revenues Are Inconsistent with a Key Driver of Seismic Revenues

163. Mr. Hobbs explained that oil prices are a key consideration driving companies to increase or decrease exploration & production activity, and therefore seismic industry revenues.<sup>252</sup> We tested this claim in our first report, confirming that revenues generated from selling offshore seismic data are highly correlated with Brent crude prices.<sup>253</sup> Consistent with this, we found that both GSI's actual revenues and its spending to acquire new data, which generate new revenue, were similarly highly correlated with Brent crude prices.<sup>254</sup> Given this clear correlation

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<sup>251</sup> BR-54, 

<sup>252</sup> RER-02, Robert Hobbs Expert Report, ¶ 76.1.

<sup>253</sup> Brattle 1, ¶ 107.

<sup>254</sup> Brattle 1, ¶¶ 108-109.

between seismic industry revenues and Brent crude prices, Mr. Sharp's projection of GSI's normalized revenues should have been correlated with Brent crude prices. However, as we demonstrated, this correlation was close to zero.<sup>255</sup> This result confirms that Mr. Sharp's assumed normalized revenues are unreasonable.

164. Mr. Sharp's second report critiques our analysis, arguing that our analysis of the relationship between GSI's actual revenues and oil prices was flawed because we examined a period ending in 2008 and that extending the analysis to 2012 would show a lower correlation.<sup>256</sup> Mr. Sharp's argument, however, ignores that after 2008, GSI stopped spending to acquire new data. As spending to acquire new data is a key driver of revenue for GSI and other seismic data providers,<sup>257</sup> one would expect that the prior relationship between GSI's actual revenues and oil prices would cease after 2008. Moreover, GSI's decision to sue customers, which we understand caused customers to avoid licensing data from GSI, would also distort the correlation beyond 2008. Thus, Mr. Sharp's proposed extension of our analysis to 2012 lacks economic merit.
165. Mr. Sharp also argues that our regression of GSI's actual revenues to oil prices is misdirected because those revenues were depressed by the alleged breaches.<sup>258</sup> We disagree. The purpose of this regression was to show that GSI's actual revenues, like the overall offshore seismic industry revenues, were strongly related to oil prices.<sup>259</sup> This fact was important to demonstrate that Mr. Sharp's estimate of GSI's normalized revenues is unreliable because it bore no such relationship.

#### **VIII.B.4.Mr. Sharp's Range of Maintainable Revenues Is Biased Upwards**

166. For his November 2017 Valuation Date, Mr. Sharp presents a high and a low case for maintainable revenues. The high case amount is [REDACTED] consistent with the [REDACTED] average of the highest five years from Mr. Sharp's but-for GSI revenues from 2000 to 2017.<sup>260</sup> Mr. Sharp's low case is [REDACTED], which is significantly higher than the [REDACTED]

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<sup>255</sup> Brattle 1, ¶ 111.

<sup>256</sup> Sharp 2, ¶ 82.

<sup>257</sup> Brattle 1, ¶ 122.

<sup>258</sup> Sharp 2, ¶¶ 80-81.

<sup>259</sup> Brattle 1, ¶¶ 107-110.

<sup>260</sup> Sharp 1, Schedule B2.1.

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██████████ average of the lowest five years of his but-for revenues.<sup>261</sup> Brattle 1 explained that it was biased to use a high case that was consistent with the average of the five highest years' revenue but a low case that significantly *exceeded* the average of the lowest five years' revenue.<sup>262</sup>

167. Mr. Sharp responds that his assumed high and low maintainable revenues were not based on the average revenue for the highest and lowest five years, but rather based on "our judgmental selection."<sup>263</sup> Mr. Sharp continues to explain that selecting a low case of ██████████ based on the average of the lowest five years of revenue would not be reasonable, because there were only two years between 2000 and 2017 in which his normalized revenues were below ██████████<sup>264</sup> We disagree. Given the steep decline in the global offshore seismic industry discussed in paragraph 162 above, there is good reason to expect that future maintainable revenue would be towards the lower end of GSI's historical performance.<sup>265</sup>
168. Mr. Sharp does not explain why he believes it is reasonable to assume that GSI's high estimate of long-term maintainable revenue would exceed his estimate of GSI's normalized revenue achieved in 15 of the 18 years leading up to his November 2017 Valuation Date. Such a result is unreasonable and fails to reflect that the global offshore seismic data market had contracted significantly in the years leading up to Mr. Sharp's Valuation Dates – a fact discussed in Brattle 1 that Mr. Sharp did not dispute.<sup>266</sup> Given this decline, it cannot be assumed that GSI could consistently maintain revenues beyond his Valuation Date that are more consistent with the company's peak historical performance. We note that after correcting Mr. Sharp's erroneous allocation of the Unpaid Invoice revenues over 5 years rather than 6, Mr. Sharp's high case exceeds all but two years of GSI's normalized revenue<sup>267</sup> – the same standard that Mr. Sharp adopted to *reject* using the average of revenue from the lowest five years in his low case.

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<sup>261</sup> Sharp 1, Schedule B2.1.

<sup>262</sup> Brattle 1, ¶ 103.

<sup>263</sup> Sharp 2, ¶ 88.

<sup>264</sup> Sharp 2, ¶ 88.

<sup>265</sup> Additionally, we dispute Mr. Sharp's assumed but-for GSI revenue for reasons discussed throughout this report.

<sup>266</sup> Brattle 1, ¶ 100.

<sup>267</sup> BR-54, ██████████

## VIII.C. Mr. Sharp's Assumed Direct Expenses for Data Collection Appear Understated

169. GSI's direct expenses are the costs associated with acquiring new data.<sup>268</sup> In his valuation, Mr. Sharp assumes that GSI will incur direct expenses of 20.1% of normalized revenue, which is the historical average from 2000 to 2008.<sup>269</sup> Our first report showed that GSI's direct expenses were increasing over time, a factor that Mr. Sharp did not investigate.<sup>270</sup> Mr. Sharp agrees that direct costs as a percentage of normalized revenues were higher in the later part of the 2000 to 2008 period.<sup>271</sup>
170. However, Mr. Sharp argues that the years with cost ratios in excess of 20.1% occur only because these are years with low normalized revenues, and the presence of fixed costs for data acquisition increases the ratio.<sup>272</sup> The presence of fixed costs associated with data acquisition could explain the higher ratio in later years, but Mr. Sharp's modelling of GSI's costs contradicts this explanation – he models them as 100% variable always being 20.1% of revenue.
171. There are two other concerns with Mr. Sharp's 20.1% direct-cost ratio. First, the normalized revenues used as the denominator in Mr. Sharp's direct expense ratio are substantially overstated. Using an overstated denominator caused Mr. Sharp to find an understated direct expense ratio. Thus, the direct costs used in his valuation are too low.

172. [REDACTED]  
[REDACTED]  
[REDACTED]<sup>273</sup> [REDACTED]  
[REDACTED]<sup>274</sup>

<sup>268</sup> CWS-06, Witness Statement of Harold Paul Einarsson, ¶ 171(d).

<sup>269</sup> Sharp 1, Schedule B2.2.

<sup>270</sup> Brattle 1, ¶ 118.

<sup>271</sup> Sharp 2, ¶ 99.

<sup>272</sup> Sharp 2, ¶ 100.

<sup>273</sup> BR-12, [REDACTED]

<sup>274</sup> BR-54, [REDACTED]



173. We have seen no basis to conclude that GSI is dramatically more efficient at data acquisition than either Pulse or TGS.<sup>275</sup> The much lower data acquisition costs assumed for GSI compared to Mr. Sharp's comparables raise concerns about the reliability of his assumed 20.1% ratio. We have no basis to conclude that the ratio's numerator – GSI's actual data acquisition costs – is unreliable. The speculative part of this ratio is from Mr. Sharp's large revenue normalization adjustments, which he admits are "difficult or impossible to validate, corroborate, or verify."<sup>276</sup>

[REDACTED]

[REDACTED]<sup>277</sup> This ratio is relatively consistent with the TGS and Pulse ratios and provides further evidence that the vast majority of revenue added in Mr. Sharp's normalization adjustments are unreasonable.

## VIII.D. Mr. Sharp's Capital Expenditures Are Not Supported

174. Mr. Sharp assumes that GSI's capital expenditures would be equal to 9% of revenue.<sup>278</sup> In our first report, we explained that this assumption was not supported by any analysis.<sup>279</sup> Mr. Sharp did not test this assumption, and the witness statement of Paul Einarsson from which this statement was drawn did not provide any documentation or analysis to support this figure.<sup>280</sup> Mr. Sharp responds that the 9% is reasonable because: (1) [REDACTED]  
[REDACTED] and (2) GSI's ratio was higher than those of Pulse and TGS.<sup>281</sup>
175. Mr. Sharp's new analyses do not support the 9%. First, on its face, the 9% is lower than the [REDACTED] – a discrepancy that Mr. Sharp does not evaluate. Second, the comparison to Pulse and TGS is inapt. One would expect the ratios for Pulse and TGS to be lower. Pulse does onshore seismic that requires no vessels, and TGS generally contracts for

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<sup>275</sup> Vessel ownership could make GSI data acquisition costs somewhat lower, but the costs of the vessels are reflected in capex, which is only a small percentage of this difference. Moreover, GSI sold its vessels many years before Mr. Sharp's Valuation Date, so the forecast direct expenditures should not reflect vessel ownership.

<sup>276</sup> Sharp 2, ¶ 38.

<sup>277</sup> BR-12, [REDACTED]  
[REDACTED]

<sup>278</sup> Sharp 1, ¶ 121 (p. 26).

<sup>279</sup> Brattle 1, ¶ 133.

<sup>280</sup> CWS-06, Witness Statement of Harold Paul Einarsson, ¶ 171(h).

<sup>281</sup> Sharp 2, ¶¶ 115-116.

vessels rather than owning them.<sup>282</sup> Without vessel ownership, one would expect capital expenditures to be lower all else equal. It is not reasonable to compare GSI's capex to that of Pulse and TGS without making an adjustment for this key difference.

## VIII.E. Mr. Sharp's Analysis Generates Unreasonably High Profit Margins

176. Given Mr. Sharp's recognition that the but-for assumptions used to normalize revenue are "difficult or impossible to validate, corroborate, or verify,"<sup>283</sup> it is important to test whether those assumptions generate a reasonable level of profitability. Mr. Sharp appears to agree – he compares the EBITDA margin reflected in his valuation to those of public companies that he deemed to be "somewhat comparable" to GSI.<sup>284</sup> His comparison finds that the GSI EBITDA margin of about [REDACTED] in his valuation is below the roughly 85% margin earned by Pulse, a seismic company he understands to be similar to GSI.<sup>285</sup>
177. In comparing margins, it is important to adjust for accounting differences related to data acquisition costs. GSI's accounting practice is to deduct data acquisition costs as an operating expense in the year they are spent.<sup>286</sup> In contrast, the public companies capitalize these costs (i.e., treat them as an investment rather than an expense when they are incurred)<sup>287</sup> and later recognize the costs as amortization expense deducted over the assumed useful life of the data.<sup>288</sup> Because of this different accounting treatment, it is not appropriate to directly compare the EBITDA margins for GSI and the public companies – one must first adjust for the treatment of data acquisition costs to compare on an apples-to-apples basis. Mr. Sharp recognizes this, and does so in his first report. He calculates an adjusted EBITDA for the public companies, which represents the EBITDA that those companies would have earned if they had expensed data acquisition costs in the year when they were incurred – the same way GSI

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<sup>282</sup> Brattle 1, ¶ 130. **RER-02**, Robert Hobbs Expert Report, ¶ 20

<sup>283</sup> Sharp 2, ¶ 38.

<sup>284</sup> Sharp 1, ¶¶ 3, (p. 7) and 76 (p. 17).

<sup>285</sup> Sharp 1, ¶¶ 119 and 119.2 (p. 25). The actual margins vary slightly from 75% depending on whether one is using Mr. Sharp's low or high case valuation.

<sup>286</sup> Sharp 2, ¶ 110; Sharp 1, ¶ 119 (p. 25).

<sup>287</sup> **RER-02**, Robert Hobbs Expert Report, ¶ 80.

<sup>288</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 43.

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accounts for them.<sup>289</sup> Mr. Sharp refers to EBITDA margins calculated by deducting data acquisition costs in the year they were incurred as a “normalized EBITDA margins.”<sup>290</sup>

178. We agree with Mr. Sharp’s decision to conduct his comparison of the EBITDA margins on a normalized basis. However, we explained in our first report that Mr. Sharp’s implementation is not reliable. The [REDACTED] margin is the margin that Mr. Sharp believes GSI could have maintained over the long term, while the 85% is the Pulse margin is from a specific, anomalous, point in time.<sup>291</sup> As shown in our workpapers which calculate the Pulse margin from 2000 forward, Pulse data acquisition costs are very “lumpy” – they were very high in some years and very low in others. This makes the Pulse margin highly volatile across years, as shown in Figure 22 of our first report.<sup>292</sup> The [REDACTED]

[REDACTED]<sup>293</sup> [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]<sup>294</sup>

179. When compared to the long-term average normalized EBITDA margin of 21% for Pulse, the [REDACTED] EBITDA margin underlying Mr. Sharp’s valuation of GSI is clearly excessive. After reviewing our analysis of the 21% Pulse margin, Mr. Sharp now expresses a new opinion: that it is also necessary to compare EBITDA margins without adjusting for the different accounting treatment of data acquisition expenses (which he refers to as the “unadjusted EBITDA margin”).<sup>295</sup> We disagree. The appropriate comparison of the Pulse and GSI margins should be on an apples-to-apples basis with respect to the accounting treatment for data acquisition costs.
180. In the unadjusted EBITDA for Pulse (and TGS) there is no recognition of any cost for data acquisition because: (1) the amount spent on new data acquisition is treated as an investment and only appears on the income statement as amortization expense; and (2) EBITDA is earnings before income taxes, depreciation, and amortization, so amortization expense is not deducted in calculating EBITDA. In effect, by comparing the GSI EBITDA to the Pulse unadjusted EBITDA, Mr. Sharp is examining the margin that Pulse would earn if its data acquisition were free.

<sup>289</sup> Sharp 1, ¶ 119 (p. 25).

<sup>290</sup> Sharp 1, ¶ 119.2 (p. 25).

<sup>291</sup> Brattle 1, ¶ 131 and Figure 22.

<sup>292</sup> Brattle 1, p. 58.

<sup>293</sup> BR-12, [REDACTED]

<sup>294</sup> BR-12, [REDACTED]

<sup>295</sup> Sharp 2, ¶¶ 108-112

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Comparing a Pulse margin that assumes no cost to acquire data to a margin in which GSI must pay to acquire data incorporates clear bias into the test – all else equal the unadjusted EBITDA margin will always exceed the normalized EBITDA margin.

181. The bias is substantial in this case, because data acquisition costs are substantial. For Pulse, the average unadjusted EBITDA margin from 2000 to 2018 is about 21%, while the average normalized EBITDA margin over the same period is 75%.<sup>296</sup> The difference, in this case 54% of revenue (75% - 21%), is the cost of data acquisition. For TGS, which Mr. Sharp introduces in his second report as another comparable company, the long-term average margin is about 27%.<sup>297</sup> All else equal, GSI could have somewhat higher EBITDA margins if it were assumed to own vessels. However, the impact of this is limited because GSI's historical investment in vessels shows that the difference between owning vessels and contracting for them is somewhat limited.<sup>298</sup>
182. Mr. Sharp's rationale for concluding that it is appropriate to compare the GSI normalized margin to an unadjusted margin for Pulse and TGS is that some data acquisition costs in a year may be for studies that do not generate revenues until the following year.<sup>299</sup> We agree that such costs may exist, but this applies to GSI as well as to Pulse and TGS. This timing issue is not addressed by comparing an unadjusted margin for Pulse and TGS (that ignore data acquisition costs altogether) to a normalized margin for GSI. The appropriate way to address this timing issue is to analyze margins over the long term to address such anomalies. This is what we did in our first report for Pulse and have done for Mr. Sharp's newly identified comparable of TGS.
183. Mr. Sharp argues that the comparison of GSI's profit margin to those of Pulse and TGS "is intended to serve as a test of reasonableness to our primary approach."<sup>300</sup> This test is particularly important because the profitability in Mr. Sharp's analysis is driven primarily by the speculative revenue adjustments for Unpaid Invoices and assumed licensing revenues in the absence of Board Access. Mr. Sharp's analysis fails this test. The profitability underlying his but-for valuation of GSI is demonstrably excessive when compared to those of the companies that Mr. Sharp considers have a similar business model. Figure 14 compares the EBITDA margin underlying Mr. Sharp's but-for valuation of GSI to that of Pulse and TGS, Mr. Sharp's two

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<sup>296</sup> BR-12, [REDACTED]

<sup>297</sup> BR-54, [REDACTED]

<sup>298</sup> GSI's investment was equal to only [REDACTED] Sharp 2, ¶ 115.

<sup>299</sup> Sharp 2, ¶ 111.

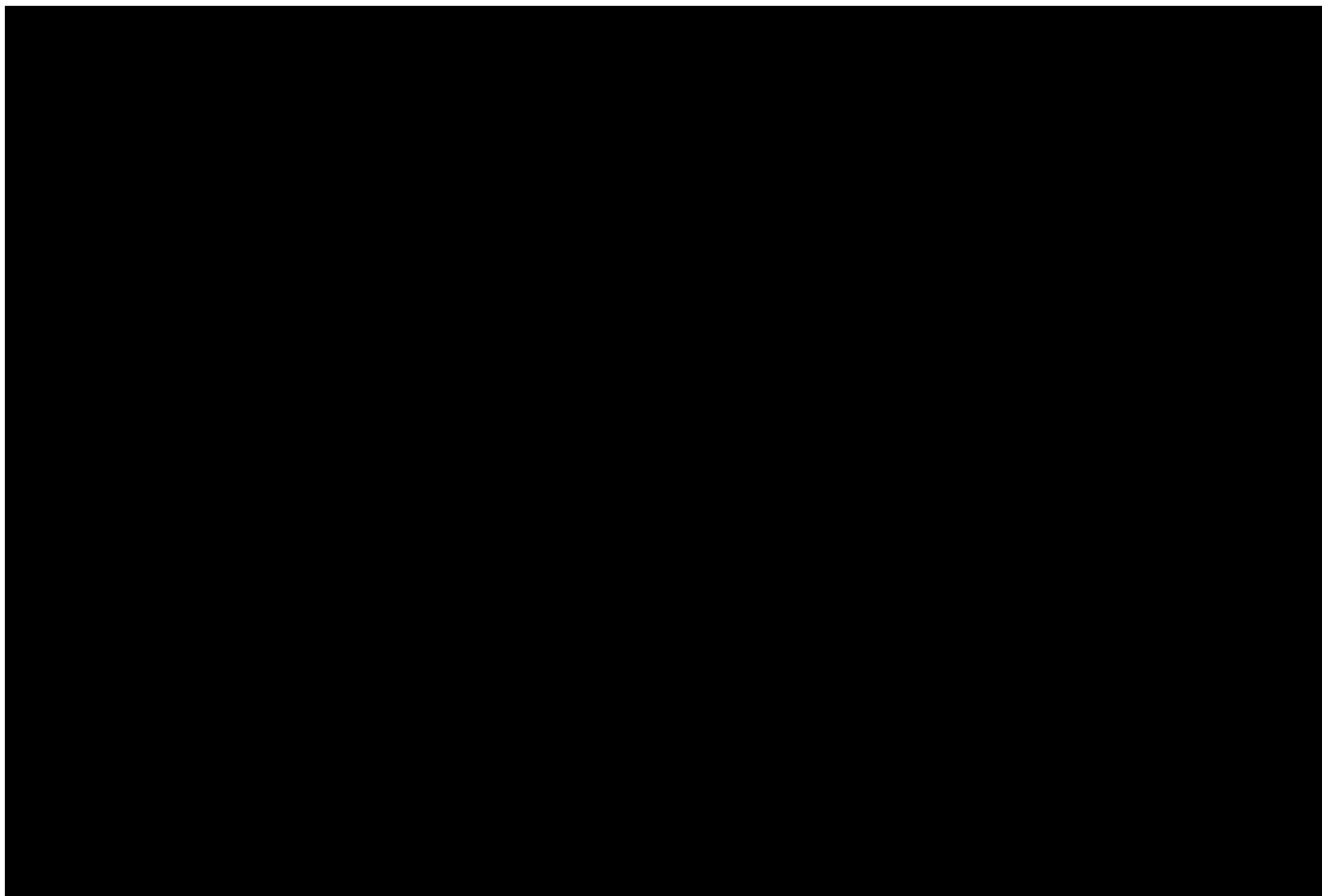
<sup>300</sup> Sharp 2, ¶ 113.

selected comparables. On an apples-to-apples basis, the EBITDA margin of GSI is clearly unreasonable.

FIGURE 14:

[REDACTED]

<sup>301</sup>



184. Mr. Sharp argues that GSI's margin should be high because it could continue to earn revenues from data collected in previous years.<sup>302</sup> However, this is not unique to GSI. Pulse and TGS also can continue generating revenues on previously collected data.<sup>303</sup> Even if GSI chooses to charge for its data using a different pricing structure,<sup>304</sup> this does not mean that GSI should be consistently more profitable than its competitors. Additionally, while GSI might have lower overhead costs as a private company, it lacks the benefits of scope and scale that TGS has.<sup>305</sup>

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<sup>301</sup> BR-54, [REDACTED]

<sup>302</sup> Sharp 2, ¶¶ 105 and 106.

<sup>303</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 74.

<sup>304</sup> Mr. Sharp suggests GSI's licensing practices differed from those of its competitors. Sharp 2, ¶ 181.

<sup>305</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 12.

The but-for GSI would have had to compete with companies like TGS. Making the assumption of significantly higher profitability for GSI over the long term unreasonable. As discussed by Mr. Hobbs, one would expect GSI's profitability to be below that of TGS because GSI's financial management model relied heavily on purchasing seismic vessels, in contrast to TGS's asset-light business model.<sup>306</sup>

## VIII.F. Mr. Sharp's WACC Is Speculative and Unreliable

185. In our first report, we explained why Mr. Sharp's discount rate, which he described as the weighted average cost of capital, or WACC, was both critical to his CCF method, and unreliable. We cited the leading finance text to note that best practice uses a discount rate equal to the WACC to capture market risk and makes explicit adjustments to the cash flows for other risks. In that way they can be tested. They are not automatically compounded over time, as they are if adjustments are instead simply added 10-15% to the WACC to estimate discount rate (a process the cited finance textbook refers to as adding a "fudge factor"). We noted Mr. Sharp provided no analysis to support his fudge factors.
186. In response, Mr. Sharp again provides no such analysis. Instead, he argues that the 10-15% premium is "judgemental" and cannot be "'calculated' or scientifically determined."<sup>307</sup> We agree. If the basic theory of the WACC had not made it inappropriate, then it is an arbitrary judgement unsupported by analysis that would have done so.
187. Mr. Sharp calculated the cost of debt used in his WACC calculation assuming that GSI would have a BBB rating: "This rating was selected as being investment grade and in the range of ratings for those companies considered in our comparables analysis."<sup>308</sup> Brattle 1 noted that Mr. Sharp did not provide any support for credit ratings of his comparables, but our analysis shows that for those that did have credit ratings, the ratings all were well below BBB and were not investment grade.<sup>309</sup> A lower credit rating results in a higher cost of debt and WACC. In response, Mr. Sharp does not dispute our analysis of credit ratings, but instead abandons his prior approach of looking at the credit ratings of comparables. Instead, he looks at GSI's actual borrowing costs and concludes that they were consistent with a rating of between B and BB,

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<sup>306</sup> Rejoinder Expert Report of Robert Hobbs, ¶ 12.

<sup>307</sup> Sharp 2, ¶¶ 126-127.

<sup>308</sup> Sharp 1, ¶ 30 (p. 42).

<sup>309</sup> Brattle 1, ¶ 139.

which would reduce his valuation by more than 6%.<sup>310</sup> He declines to adjust his valuation, however, arguing that the but-for GSI would be more creditworthy despite the comparables.<sup>311</sup> Those data are from the period 2006-2009, up to a decade before the Alberta Decisions, but Mr. Sharp rejects them as being depressed by “the [Alberta] Decisions and their ancillary effects.”<sup>312</sup>

188. Mr. Sharp’s conclusion is speculative, and the limited analysis he presents in his reply report does not support it.

## VIII.G. Mr. Sharp’s Reasonableness Test Remains Circular

189. To test the reasonableness of his CCF valuation of GSI, Mr. Sharp compares the EBITDA multiple based on his forecast EBITDA and his value for GSI with market multiples from comparable companies. In our first report, we pointed out that this test is not meaningful – it is circular because Mr. Sharp’s forecast EBITDA is also the primary driver of his valuation. We noted that, because of the circularity, the test could come to a similar conclusion even if GSI’s EBITDA and its true value was one-tenth or ten times what Mr. Sharp estimated.<sup>313</sup>
190. In his second report, Mr. Sharp accepts that his test has “an inherent circularity,” but that a more appropriate validation exercise that avoids this circularity “is simply not possible.”<sup>314</sup> That may be true, but the fact that there is not a meaningful validation available does not make an unreliable one meaningful.
191. Mr. Sharp also argues that the test was only meant “to evaluate our enterprise value conclusion given a certain level of EBITDA.”<sup>315</sup> Of course, that means if his EBITDA estimate is wrong, as we have shown it is, the validation exercise is meaningless.

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<sup>310</sup> Sharp 2, ¶ 129.

<sup>311</sup> Sharp 2, ¶ 130.

<sup>312</sup> Sharp 2, ¶ 130.

<sup>313</sup> Brattle 1, ¶¶ 145-148.

<sup>314</sup> Sharp 2, ¶¶ 139-140.

<sup>315</sup> Sharp 2, ¶ 142.

## VIII.H. The CCF Method Is Unreliable for Valuing GSI

192. GSI's historical performance makes it clear that Mr. Sharp's use of the CCF method is inappropriate. Mr. Sharp explained that he elected to apply the CCF method for two reasons: (1) GSI would have been a going concern beyond the Valuation Dates; and (2) GSI did not have multi-year forecasts that would be required with a discounted cash flow method.<sup>316</sup>
193. The first reason, that GSI would have been a going concern at the Valuation Dates is demonstrably wrong. GSI ceased to be a going concern many years before the Alberta Decisions were issued or expected.<sup>317</sup>
194. Second, even Mr. Sharp's but-for GSI is not a stable business prior to his Valuation Dates, and is therefore a poor candidate for valuation using the CCF method. Mr. Sharp cited to the book, *The Valuation of Business Interests*. The authors of this book explain that "[i]mportantly, the [CCF] methodology assumes relatively stable discretionary cash flows into perpetuity. As such its application is generally appropriate in circumstances...of mature business with relatively consistent discretionary cash flows."<sup>318</sup>
195. This is recognized in a key arbitration treatise. Mark Kantor's *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence* states that:
- "A CCF valuation relies on a company's historical income amounts. Consequently, the reliability of the CCF method depends critically on the reliability of those historical figures."<sup>319</sup>
  - "If the historical income amounts are, for whatever reason, not a good predictor of future income amounts, then again the CCF valuation will prove inaccurate."<sup>320</sup>
  - "The CCF method is thus most useful when the future is expected to be similar to the past. However, if the business is potentially facing either a downturn or an upturn, then, as the

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<sup>316</sup> Sharp 1, ¶ 75, (p. 17).

<sup>317</sup> Brattle 1, Section VI.A.2.

<sup>318</sup> BR-64, Campbell, Ian R., and Howard E. Johnson. *The Valuation of Business Interests*, 2001, p. 114.

<sup>319</sup> BR-65, Kantor, Mark. *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence*, 2008, p. 215.

<sup>320</sup> BR-65, Kantor, Mark. *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence*, 2008, p. 216.



disclaimer in those advertisements about investment funds say, ‘past results are no guarantee of future performance.’”<sup>321</sup>

196. GSI does not exhibit the stability required to be valued reliably using the CCF. It would not have been a going concern at Mr. Sharp’s Valuation Dates, even if the Alberta Decisions had ruled in GSI’s favor. Even if one assumes that GSI would have been a going concern, as Mr. Sharp does, the CCF method is not a reliable valuation approach for GSI. In the years leading up to both of Mr. Sharp’s valuation dates, the seismic industry was experiencing a substantial decline in revenue. Even Mr. Sharp’s analysis suggests steep declines in GSI revenue in the years leading up to this valuation dates, as shown in Figure 13 above. Mr. Sharp’s own counterfactual analysis concludes that GSI’s business was deteriorating in the years leading up to his Valuation Dates (albeit outperforming the industry as a whole for reasons unknown<sup>322</sup>). As Mr. Kantor states “[t]he CCF method is most useful when the future is expected to be similar to the past,”<sup>323</sup> – a characteristic that is not present here given the significant deterioration the offshore seismic industry and Mr. Sharp’s own prediction of a significant decline in performance in the years leading up to both of his Valuation Dates.

## IX. Lost Employment Earnings Are Attributable to GSI’s Own Actions

197. Mr. Sharp damages of approximately [REDACTED] in lost earnings for the Einarssons. This assumes that the Einarssons would have been employed at GSI and paid market wages until their assumed retirement dates.<sup>324</sup> Brattle 1 explained that:<sup>325</sup>
- It is speculative to assume that Paul and Russell Einarsson would have continued to work until 2039 and 2040, respectively, when they turned 75. Additionally, Mr. Sharp’s assumption that Davey Einarsson would have retired at the end of 2019 contradicts Paul Einarsson’s statement in 2008 that Davey was retiring.<sup>326</sup>

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<sup>321</sup> **BR-65**, Kantor, Mark. *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence*, 2008, p. 218.

<sup>322</sup> See paragraph 162.

<sup>323</sup> **BR-65**, Kantor, Mark. *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence*, 2008, p. 218.

<sup>324</sup> Sharp 2, ¶ 6.

<sup>325</sup> Brattle 1, ¶¶ 209 to 214.

<sup>326</sup> **BR-66**, Email From Paul Einarsson, dated 01 December 2008.

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- GSI ceased to be a going concern well before the alleged breaches, so it lacked the ability to pay these wages before the Alberta Decisions.
- Mr. Sharp ignores the potential for the Einarssons to mitigate this loss by seeking alternative employment, which, by definition, should have earned them the same market wages.
- The present value of a stream of wages to be paid from a risky business should not be determined using a risk-free discount rate.

198. Sharp 2 argues that, but for the alleged breach, GSI would have been a going concern that could pay the wages.<sup>327</sup> We disagree. The Claimants and Mr. Sharp agree that the customer lawsuits destroyed GSI's going concern value before the Alberta Decisions. In the counterfactual, where GSI could have continued to pursue litigation,<sup>328</sup> Mr. Sharp also agrees that the results would be speculative,<sup>329</sup> so it cannot be assumed that GSI would be able to pay the claimed wages or that the services would be valuable in that scenario.
199. Mr. Sharp also argues that GSI's litigation efforts against customers resulted in reputational harm that would have prevented the Einarssons from finding employment in the industry.<sup>330</sup> Again, the damage to the Einarssons' reputations resulted from litigation efforts initiated long before the Alberta Decisions, so was not caused by the Alberta Decisions, nor would it be remedied in the counterfactual scenario as Mr. Sharp assumes.
200. Mr. Sharp states too that "a retirement age of 75 years old is not unreasonable for a closely-held private corporation" and the Einarssons themselves stated that this was their intention.<sup>331</sup> Mr. Sharp provides no evidence to support this claim.
201. Finally, Mr. Sharp argues that the use of the risk-free discount rate is appropriate because the risk to these earnings was "low" in the counterfactual, so if GSI ceased operations, the Einarssons could have found employment elsewhere in the industry.<sup>332</sup> We disagree that a risk-free rate is appropriate to discount future earnings. Even if the risk was low, it was not risk

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<sup>327</sup> Sharp 2, ¶ 171.

<sup>328</sup> Claimants' Responses to Respondent's Document Requests, dated 27 October 2023 make clear that GSI was able to continue pursuing at least some of this litigation and appears to have reached some settlements as late as 2021, although these settlements were withheld due to privilege. See Response to Request No. 7.

<sup>329</sup> Sharp 2, ¶ 163.

<sup>330</sup> Sharp 2, ¶ 172.

<sup>331</sup> Sharp 2, ¶ 174. Emphasis added.

<sup>332</sup> Sharp 2, ¶ 175.

free. It also incorrectly assumes a counterfactual where the Einarssons' reputations have not been destroyed even before the Alberta Decisions.

202. We maintain our conclusion that Mr. Sharp's calculation of lost employment earnings is speculative, that it rests on unsupported or faulty assumptions, and that it is disconnected from the claimed breach.

## X. Shareholder Loan Losses Would Likely Be Incurred Even in the Counterfactual Scenario

203. Mr. Sharp calculates damages arising from the inability of GSI to repay shareholder loans of C\$5.7 to C\$6.3 million.<sup>333</sup>
204. Mr. Sharp correctly states that the value of the loans depends on GSI's ability to repay the loans.<sup>334</sup> However, as we have shown above, GSI's going-concern value was nil starting well before the alleged expropriation. In the but-for world, repayment of the loans was therefore contingent upon the receipt of proceeds from continued litigation, which Mr. Sharp confirms is speculative.<sup>335</sup>

## XI. Replacement Cost Does Not Measure GSI Damages

205. The Claimants submitted the expert report of Mr. Ancira of Troika USA (the "Troika Report"), the scope of which was to "provide a valuation of the GSI Multi-Client (MC) library."<sup>336</sup> The Troika Report attempts to value the library using a replacement cost method.<sup>337</sup> The Troika Report concludes that the appropriate way to evaluate the replacement cost for GSI's data library is based on the cost that GSI would incur if it were to acquire the data in its multi-client

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<sup>333</sup> Sharp 2, ¶ 5

<sup>334</sup> Sharp 2, ¶ 167.

<sup>335</sup> Sharp 2, ¶ 24.

<sup>336</sup> CER-07, Expert Report of Victor Ancira, ¶ 9.

<sup>337</sup> CER-07, Expert Report of Victor Ancira, ¶ 15.

library at current data collection costs. This cost is estimated to be US\$793.6 million by the Troika Report.<sup>338</sup>

206. The Claimants argue that the Troika Report’s analysis implements Brattle’s recommended “asset-based approach” to valuing the GSI data library.<sup>339</sup> Claimants further argue that the Troika Report’s valuation demonstrates that Mr. Sharp’s damages assessment is conservative.<sup>340</sup> As we explain below, both of Claimants’ arguments are incorrect.

## XI.A. The Troika Report Misapplies the Replacement Cost Method

207. As set forth in the standards promulgated by the International Valuation Standards Council (“IVSC”), the replacement cost method is one type of cost-based valuation approach.<sup>341</sup> We note that replacement cost is different than Fair Market Value.
208. Replacement cost is defined by the IVSC as “a method that indicates value by calculating the cost of a similar asset offering equivalent utility.”<sup>342</sup> However, when calculating the replacement cost, the IVSC explains that it is necessary to “mak[e] deductions for physical deterioration and all other relevant forms of obsolescence.”<sup>343</sup> Specifically, when calculating the replacement cost, the IVSC explains that a valuator must “determine whether there is any depreciation related to physical, functional and external obsolescence associated with the subject asset” and, if so, it is necessary to “deduct total depreciation from the total costs to arrive at a value for the subject asset.”<sup>344</sup>
209. As recognized by the IVSC, the economic principle underlying the cost approach to valuation is that “a buyer will pay no more for an asset than the cost to obtain an asset of equal utility.”<sup>345</sup> This principle sets a cap on the fair market value of an asset, because knowing what it would

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<sup>338</sup> CER-07, Expert Report of Victor Ancira, ¶ 22.

<sup>339</sup> Claimants’ Rebuttal Memorial, ¶ 359.

<sup>340</sup> Claimants’ Rebuttal Memorial, ¶ 359.

<sup>341</sup> BR-32, IVSC, International Valuation Standards Effective 31 January 2022, ¶ 60.2, (p. 48).

<sup>342</sup> BR-32, IVSC, International Valuation Standards Effective 31 January 2022, ¶ 70.1, (p. 49). Emphasis in original excluded.

<sup>343</sup> BR-32, IVSC, International Valuation Standards Effective 31 January 2022, ¶ 60.1, (p. 48). Emphasis added.

<sup>344</sup> BR-32, IVSC, International Valuation Standards Effective 31 January 2022, ¶ 70.4, (p. 50). Emphasis in original excluded.

<sup>345</sup> BR-32, IVSC, International Valuation Standards Effective 31 January 2022, ¶ 60.1, (p. 48).

cost to obtain an asset of equal utility is distinct from the question of whether it would make economic sense to pay that cost. For example, it might cost US\$1 billion to rebuild a factory to produce mimeograph machines. However, no rational investor would do so, because the technology is obsolete – knowing the cost to rebuild does not provide any insight into the market value of a mimeograph factory. To account for this, the IVSC approach to replacement costs requires one to account for depreciation due to physical, functional, and external obsolescence.<sup>346</sup>

210. However, the Troika Report does not consider, or even mention, the depreciation deduction to account for obsolescence. This deduction is required to avoid over-valuing an asset. Examples of this potential obsolescence for the GSI library that would be necessary include, but are not limited to, the following:

- For data covering areas that have already undergone significant hydrocarbon development, the potential for further exploration, the therefore the demand for data, may be limited.
- Data which has already been widely licensed (directly or through equalization or transfer fees) may offer few opportunities for further licensing, particularly in Canada, which Paul Einarsson characterizes as a relatively small market.<sup>347</sup>
- Data covering areas that have been determined to be non-viable for technical or economic reasons.<sup>348</sup>
- Data covering areas that have restrictions on exploration and production activities, such as GSI's Beaufort and High Arctic data.<sup>349</sup>
- Data covering areas in which a competing provider has newer and/or better data. This is important because older data – the majority of GSI's library – was shot in 2D using older technology that provides less useful information.<sup>350</sup>
- Physical deterioration of GSI data tapes may make some data inaccessible or unusable without additional cost.<sup>351</sup>

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<sup>346</sup> External obsolescence refers to the reduction in an asset's value due to factors outside of the control of the owner, such as environmental, social, or economic considerations.

<sup>347</sup> **CWS-12**, Witness Statement of Harold Paul Einarsson, ¶¶ 131 and 147.

<sup>348</sup> Rejoinder Expert Opinion Report of Doug Uffen, ¶¶ 48-49.

<sup>349</sup> **RER-03**, Doug Uffen Expert Report, ¶ 54. Rejoinder Expert Opinion Report of Doug Uffen, ¶¶ 36-37; 48. Data from the Arctic is considered obsolete for the data library valuation.

<sup>350</sup> **RER-03**, Doug Uffen Expert Report, ¶¶ 62-65. Rejoinder Expert Opinion Report of Doug Uffen ¶¶ 14; 47.

<sup>351</sup> **RER-03**, Doug Uffen Expert Report, ¶ 51. Rejoinder Expert Opinion Report of Doug Uffen ¶ 15 and ¶ 43.

211. The Troika Report's failure to consider any of these factors makes its findings unreliable.

## XI.B. The Troika Report's Valuations Make No Economic Sense

212. The GSI purchase of data from Halliburton also demonstrates the unreasonableness of using replacement costs as applied by the Troika Report. The majority of GSI's data was purchased from Halliburton. A US affiliate of GSI acquired this data from Halliburton for US\$450,000, a price Mr. Sharp argues may not reflect fair market value because the acquisition was part of a legal settlement between the GSI affiliate and Halliburton.<sup>352</sup> However, GSI's US affiliate sold it to GSI in a cross-border transaction for an amount up to US\$475,000. That transaction, which accounts for the majority of GSI's data, should reflect fair market value, because transfer prices in cross-border transactions are required to do so, to ensure proper taxation in each jurisdiction.<sup>353</sup> This US\$475,000 purchase price compares with Davey Einarsson's estimate that the original cost to recreate this data was more than US\$400 million, **more than 800x higher** than the purchase price.<sup>354</sup> This difference underscores why the cost to recreate data, which underlies the Troika Report conclusion, is an unreliable measure of value.

## XI.C. Valuations Commissioned by GSI in the Normal Course of Business Recognize the Need to Adjust for Depreciation

213. The need for a depreciation adjustment to the replacement cost, as reflected in the IVSC standards, was explicitly recognized in the data-library valuations that GSI commissioned in the normal course of business to provide to potential lenders. GSI hired an independent expert firm, [REDACTED] to conduct valuations in [REDACTED]. In these valuations, [REDACTED] applies what it refers to as the "[REDACTED]" approach. This method is defined as "[REDACTED]"

<sup>352</sup> C-049, Seismic Data Purchase Agreement; Sharp 2, ¶ 59.

<sup>353</sup> C-050, Seismic Data Purchase Agreement, C-050\_0003, § 2. Canada was endorsing the use of arm's length pricing for cross-border transfers long before the sale from GSI's US affiliate to GSI. See BR-67, International Transfer Pricing and Other International Transactions, dated 27 February 1987, ¶ 10.

<sup>354</sup> CWS-03, Witness Statement of Theodore David Einarsson: Witness Statement of Theodore David Einarsson, ¶ 25.

## Rejoinder Expert Report of The Brattle Group

[REDACTED] "355 [REDACTED]

[REDACTED] 356

[REDACTED]

[REDACTED]

[REDACTED]

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214. Figure 15 shows how [REDACTED] estimated that the value of data library in [REDACTED] as a percentage of acquisition cost, declines with age over a [REDACTED]. Data acquired is valued at [REDACTED] of replacement cost in the year it is acquired. After [REDACTED] assumed a [REDACTED] discount from replacement cost due to age. By [REDACTED] the discount has increased to [REDACTED]. About half of GSI's data library was more than [REDACTED] as of the Valuation Dates, and the most recent data was about [REDACTED]<sup>357</sup> [REDACTED]

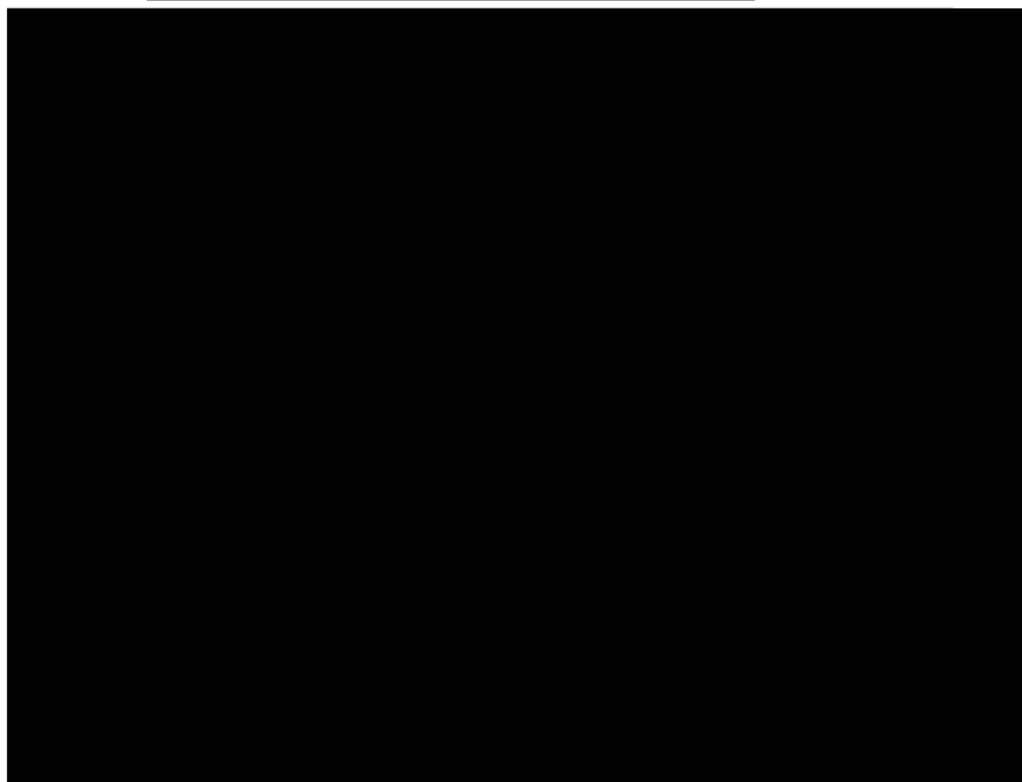
<sup>358</sup> Given the age of GSI's data library, using even the slower depreciation rate would result in a substantial discount that is ignored entirely by Troika.

355 **C-560**, Bundle of Seismic Data Valuations Reports for GSI by [REDACTED], C-560\_0008, emphasis added.

<sup>356</sup> **C-560**, Bundle of Seismic Data Valuations Reports for GSI by [REDACTED], C-560 0012.

357 **BR-54,** [REDACTED] Note that the tabulation of data here reflects what GSI presents on its website, which differs slightly from those presented in **CER-07**, Expert Report of Victor Ancira at paragraph 12. We have not undertaken to investigate these apparent differences.

358 **C-560**, Bundle of Seismic Data Valuations Reports for GSI by [REDACTED], C-560 0018.

FIGURE 15: [REDACTED] <sup>359</sup>

215. Mr. Uffen has estimated the maximum value of GSI's data library. As would be expected, given the discounts for age recognized in the [REDACTED] an analysis that accounts for depreciation as required by valuation standards and is consistent with the [REDACTED] approach would result valuations substantially below those estimated in the Troika Report.
216. The limited potential for licensing the data in the GSI library also reveals that Mr. Sharp's valuation of GSI makes no economic sense. Mr. Uffen estimates that, based on the [REDACTED] approach, the present value of revenues that would be received from licensing the GSI database would be no more than [REDACTED] a fraction of Mr. Sharp's valuation.<sup>360</sup> However, as Mr. Uffen cautions, the [REDACTED] approach suffers from many shortcomings and therefore, this amount, at best, should only be treated as a potential ceiling for the valuation of GSI's seismic data library.<sup>361</sup>

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<sup>359</sup> C-560, Bundle of Seismic Data Valuations Reports for GSI by [REDACTED], C-560\_0012.

<sup>360</sup> Rejoinder Expert Opinion Report of Doug Uffen, ¶ 55.

<sup>361</sup> Rejoinder Expert Opinion Report of Doug Uffen, ¶¶ 3, 29 and 55.



[Signed]

[Signed]

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M. Alexis Maniatis

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Darrell Chodorow

## Appendix A: Documents Considered

Brattle 1 and Exhibits

**BR-39**, Statement of Claim, GSI v. Total, dated 28 March 2014

**BR-40**, Statement of Defence of Canada-Newfoundland and Labrador Offshore Petroleum Board, dated 13 October 2015

**BR-41**, [REDACTED]  
[REDACTED]

**BR-42**, [REDACTED]  
[REDACTED]

**BR-43**, [REDACTED]  
[REDACTED]

**BR-44**, [REDACTED]  
[REDACTED]

**BR-45**, [REDACTED]  
[REDACTED]

**BR-46**, [REDACTED]  
[REDACTED]

**BR-47**, [REDACTED]  
[REDACTED]

**BR-48**, [REDACTED]  
[REDACTED]

**BR-49**, [REDACTED]  
[REDACTED]

**BR-50**, [REDACTED]  
[REDACTED]

**BR-51**, [REDACTED]  
[REDACTED]

**BR-52**, [REDACTED]  
[REDACTED]

**BR-53**, [REDACTED]  
[REDACTED]

## Rejoinder Expert Report of The Brattle Group

**BR-54,** [REDACTED]

**BR-55,** Geophysical Service Incorporated v Plains Midstream Canada ULC, 2023 ABCA 277

**BR-56,** Amended Statement of Claim, GSI v. ConocoPhillips, dated 27 June 2013

**BR-57,** ConnocoPhillips – Statement of Defence, dated 19 August 2013

**BR-58,** Amended Amended Amended Statement of Defence, GSI v. Husky Oil, dated 31 October 2018

**BR-59,** Statement of Defence, GSI v. Murphy Oil Company LTD., dated 28 March 2014

**BR-60,** Geophysical Service Incorporated, Acquired Data, last accessed 29 August 2024

**BR-61,** [REDACTED]

[REDACTED]

**BR-62,** [REDACTED]

[REDACTED]

**BR-63,** [REDACTED]

[REDACTED]

**BR-64,** Campbell, Ian R., and Howard E. Johnson. *The Valuation of Business Interests*, 2001

**BR-65,** Kantor, Mark. *Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence*, 2008

**BR-66,** Email From Paul Einarsson, dated 01 December 2008

**BR-67,** International Transfer Pricing and Other International Transactions, dated 27 February 1987

**BR-68,** CapIQ TGS ASA OB TGS Financials Cash Flow

**BR-69,** CapIQ TGS ASA OB TGS Financials Income Statement

**BR-70,** FRED Canadian Dollars to US Dollar Spot Exchange Rate

**BR-71,** [REDACTED]

**BR-72,** [REDACTED]

**BR-73,** [REDACTED]

**BR-74,** [REDACTED]

**BR-75,** [REDACTED]

Claimants' Memorial and Exhibits

Claimants' Rebuttal Memorial and Exhibits

Notice of Intent to Submit a Claim to Arbitration Under NAFTA Chapter Eleven, dated 10 October 2018

Claimants' Responses to Respondent's Document Requests, dated 27 October 2023

Sharp 1

Sharp 2

**CER-07**, Expert Report of Victor Ancira

**CWS-03**, Witness Statement of Theodore David Einarsson

**CWS-06**, Witness Statement of Harold Paul Einarsson

**CWS-12**, Witness Statement of Harold Paul Einarsson

**RER-02**, Robert Hobbs Expert Report

Rejoinder Expert Report of Robert Hobbs

**RER-03**, Doug Uffen Expert Report

Rejoinder Expert Opinion Report of Doug Uffen

**R-150**, Geophysical Service Incorporated v 612469 Alberta Limited (CalWest Printing & Reproductions), 2016 ABQB 356, Reasons for Judgment, dated 28 June 2016