CONFIDENTIAL

IN THE MATTER OF AN ARBITRATION UNDER CHAPTER 11 OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE UNCITRAL ARBITRATION RULES

B E T W E E N:

WILLIAM RALPH CLAYTON, WILLIAM RICHARD CLAYTON, DOUGLAS CLAYTON, DANIEL CLAYTON AND BILCON OF DELAWARE, INC.

Claimants

– and –

GOVERNMENT OF CANADA

Respondent

Comments on Expert Reports filed by Canada Witnesses, Ms. Griffiths, Dr. Blouin, Mr. Connelly and Mr. Geddes on June 9, 2017 regarding Environmental Assessment of the Whites Point Quarry and Marine Terminal Project

EXPERT REPLY REPORT OF DAVID ESTRIN

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August 20, 2017

GOWLING WLG

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CONCERNS AS TO THE IRRELEVANCE OF SIGNIFICANT PORTIONS OF CANADA EXPERT REPORTS

SUMMARY

In this Part A, I review portions of Canada reports (the Griffiths, Connelly and Blouin Expert Reports and the witness statement of Geddes) that are based upon the premise that the WPQ JRP did not carry out a complete analysis of the materials before it; and that if "community core values" (CCV) were read out of the JRP report it would be found incomplete and insufficient for the Governor-in-Council ("GIC") to approve or allow the Responsible Authority ("RA") to act.

After having reviewed these reports submitted by Canada, I am concerned that, based on six factors set out below, the portions of these reports that address this topic are irrelevant to what I understand to be the issues for this Arbitral Tribunal in the Compensation Phase of this matter.

PREFACE

1. A significant portion of the Canada reports by Ms. Griffiths and Dr. Blouin are based upon the premise that that the JRP did not carry out a complete analysis of the materials before it and, on that basis, they proceed to prognosticate adverse impacts beyond CCV might nevertheless arise if considered by a hypothetical further CEAA review panel process or a process under the NSEA. For example, Griffiths states:

> "I have been asked to provide an opinion as to the conclusions the Whites Point JRP could have reasonably reached with regard to its significance determination under CEAA had it not committed the NAFTA breach described above".[1]
>
> "The JRP described inconsistency of the project with community core values as a 'primary consideration influencing [its] decision to recommend rejection.' But having taken this approach, it is clear that the JRP did not complete its determination process with regard to other elements of the project about which the JRP had raised concerns."[2]
>
> "In Part 4 I then provide my opinion as to the conclusions the Whites Point JRP could have reasonably made under CEAA had it not adopted the approach that it did in preparing its Report that gave rise to the breach of NAFTA. . . . I have used my past experience . . . to identify concerns raised by the Whites Point JRP regarding certain environmental effects that it was mandated to consider, to review the relevant materials in the environmental assessment record that pertain to these environmental effects, and to evaluate whether the JRP could have reasonably

[1] Griffiths Report, at para. 12.

[2] *Ibid.*, at para. 60.

> concluded that the project would have resulted in likely significant adverse environmental effects under CEAA, taking into account proposed mitigation."[3]
>
> "[O]n the basis of my review, it is my opinion that the White Point JRP could have reasonably concluded that the project was likely to cause at least two significant adverse environmental effects, after taking into account proposed mitigation."[4]

2. Similarly, Dr. Blouin, in part IV of his witness statement writes:

> "In this section of my Report, I provide my opinion as to the potential recommendations of the Whites Point JRP in discharging its mandate under Nova Scotia's EA regime, had it not committed the NAFTA breach."[5]
>
> "Specifically, my approach was to review the Whites Point JRP Report and identify findings that were relevant to the provincial side of the JRP's mandate. For example, in several instances it made actual findings of adverse environmental effects. I then considered the information in the EA record relating to these issues in greater detail to determine whether the JRP's findings were reasonable and could have warranted a recommendation for rejection of the project (either on its own or in combination with other environmental effects)."[6]

3. The Connelly and Geddes reports assert that if CCV is read out of the WPQ JRP report, this would be prejudicial to the project being approvable by the GIC and Nova Scotia.

4. However, based on the factors set out below, there appears to be no relevant nor valid legal basis for this Arbitral Tribunal to consider such opinions.

IRRELEVANCE FACTORS REGARDING CANADA REPORTS

Irrelevance Factor No. 1: Canada asserts that further evidence of this nature is unwarranted; yet Canada now seeks to do this.

5. In its Counter-Memorial, Canada itself argues that the matters before the JRP are not in issue during this phase of the hearing.

> "Government decisions to reject the Whites Point project, not the JRP's acts that breached NAFTA, were the reason that the Whites Point project did not proceed."[7]

[3] *Ibid.*, at para. 15.

[4] *Ibid.*, at para. 16.

[5] Blouin Report, at para. 42.

[6] *Ibid.,* at para. 46.

[7] Canada Counter-Memorial, at para. 59.

6. Further, by tendering such evidence, Canada is seeking to do the very thing it (wrongly) says the Claimants are asking this Tribunal to do – which Canada notes the Tribunal said it would not do:[8]

> "'to conduct its own environmental assessment, in substitution for that of the JRP,' and to usurp the role of Nova Scotia and federal decision-makers by deciding 'what the actual outcome should have been, including what mitigation measures should have been prescribed if the JRP had carried out the mandate contained in applicable laws'."[9]

Irrelevance Factor No. 2: Use of this opinion evidence would effectively involve this Tribunal re-opening one of its essential findings, namely, that approval for the project was denied by Canada and Nova Scotia due to CCV.

7. This Arbitration Tribunal previously found that the only "significant adverse environmental effect" (SAEE) likely to arise from the WPQ identified by the JRP was community core values – a factor with no legal relevance under applicable legislation:

> "The Report expressly identifies only one effect of the project as both significant and adverse, namely "inconsistency with community core values". With respect to other impacts of the project, the Panel allowed that "with the effective application of appropriate mitigation measures, competent project management and appropriate regulatory oversight, most project effects should not be judged 'significant'."[10]

8. Further:

> "The Tribunal finds that the decision-makers in Nova Scotia and federal Canada had the authority and duty to make their own decision about the future of the Bilcon project. If they had considered the methodology report flawed, they could have sent it back to the JRP for clarification or further work. They could have provided for different or additional mitigation provisions. They could have agreed that the project likely had significant adverse effects after mitigation, but still approved it on public interest considerations in all the circumstances. Both Nova Scotia and then federal Canada, however, accepted the conclusion of the JRP that the project likely would have significant adverse effects on "community core values" and rejected it."[11]

9. The JRP did not make any other findings of SAEE, even though they referenced other potential environmental effects. That was consistent with the evidence and submissions of all experts from the federal and provincial governments that made submissions and testified before the JRP hearing.

10. As Canada and Nova Scotia acted on the CCV SAEE, it is irrelevant for the Tribunal in this phase of the proceedings to now consider possible further reasons as to why the project

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[8] *Ibid.*, at para. 60.

[9] Award, at para. 129.

[10] *Ibid.*, at para. 503.

[11] *Ibid.*, at para. 584.

might cause SAEE, and those parts of the reports provided by Canada to that effect are irrelevant.

11. Where there is no (valid) finding of SAEE, and where the GIC has found the JRP report complete in terms of meeting the requirements of CEAA and sufficient for it to make a decision (which is Mr. Connelly's clear conclusion in his report), the GIC has no statutory authority, and therefore no "discretion" under s. 37(1.1) of CEAA to do anything other than to affirm to the RA that it must act in accordance with the JRP's report, which again did not find any (valid) SAEE. In these circumstances, there was a positive duty on DFO as the RA to process the *Fisheries Act* authorization. There is no provision under CEAA by which the GIC could prevent the RA from doing so.

Irrelevance Factor No. 3: The essential premise that expert witnesses for Canada adopt in order to argue about unassessed impacts is that the JRP report was incomplete. However, that premise is contradicted by the analysis of Mr. Connelly, an Expert Witness offered by Canada. He has clearly articulated that the GIC evaluated the JRP report, determined that it met CEAA requirements and was complete.

12. The GIC was legally compelled to determine that the JRP report was indeed complete and complied with CEAA prior to issuing an Order in Council, the legal instrument by which approval of the WPQ project was denied.

13. This is clearly Mr. Connelly's opinion. He says in paragraph 68 of his witness statement that the existence of a JRP report satisfying the requirements of CEAA is a "precondition" to consideration of the JRP report by either the RA or the GIC and to the "validity of a government decision" under section 37:

> "Since the existence of a JRP Report that satisfies the requirements of the Act, and its consideration by the Responsible Authority and the GIC, is a precondition for the validity of the government decision, no project can be allowed to move forward until the defects in the report have been remedied and duly submitted and considered by the Responsible Authority and GIC."

14. The Connelly report provides a detailed explanation as to why the JRP report was fully complete and fulfilled all requirements expected of a CEAA panel report, as well as why such a finding was required to be made by the GIC as a prerequisite for the GIC to have made its decision to reject the WPQ project.

15. In Part III of his Report, "Possible Responses to a Joint Review Panel Report", Mr. Connelly describes the possible outcomes in respect of the GIC's consideration of a JRP report. He is very clear that the GIC cannot legitimately act on a JRP report that does not fulfil the requirements of CEAA, including that it must be complete. This is consistent with a schematic diagram he provides in Annex II page 47 to his report, entitled "Decision-making Process". This diagram makes clear that where additional information is required or a report

is considered incomplete, this information must be obtained and the gaps in the report must be remedied before a decision by the GIC can be taken.

16. He then analyses "Possible Responses to a Joint Review Panel Report" under four sub-headings:

    A The GIC requires clarification of the JRP Report's recommendations;

    B The Report does not meet the Act's requirements;

    C The Report satisfies the requirements of the Act, but additional information is sought prior to reaching a decision; and

    D Decision-makers accept the Report and decide whether to grant approval to proceed.

17. In paragraph 62 of his report, Mr. Connelly specifically notes that the GIC has the authority to request the JRP to provide clarification of any recommendations set out in its report, pursuant to section 37(1.1)(b) of CEAA. In responding to such a request, he notes that the JRP can either do that based on information already on its public record or "it may need to gather additional information, likely from the proponent of the project".

18. Mr. Connelly then makes the important observation, in paragraph 63, that although, in his view, the WPQ JRP Report indicates the panel was left with many questions regarding the adequacy and sufficiency of the information that was provided by Bilcon, "it concluded that it did have sufficient information to fulfill its mandate".

19. In the WPQ project, since the RA and GIC both reached a decision under section 37(1) of CEAA, they both necessarily must have taken the position that this condition precedent had been met, *i.e.*, that the JRP report satisfied the requirements of CEAA and that additional information was not required in order to make a decision.

20. I agree that pursuant to CEAA s. 37 (1.1(b)) the GIC may seek clarification from the JRP prior to the GIC making a decision to act on a review panel report. This Tribunal is well aware of that, in that it found that ". . . the decision-makers in Nova Scotia and federal Canada had the authority and duty to make their own decision about the future of the Bilcon project. <u>If they had considered the methodology report flawed, they could have sent it back to the JRP for clarification or further work.</u>"[12]

21. It is reasonable to assume, therefore, having regard to all of these factors and the controversy surrounding the WPQ project, that prior to making its decision to act on the JRP report, the GIC and its advisors were fully aware that the only SAEE identified by the JRP

[12] *Ibid.*, at para. 584 (emphasis added).

report was CCV; and that they also knew there were other JRP concerns and potential effects which were not being relied upon as the basis for the JRP's recommendation to reject the project.

22. In summary, it is my view that the following are reasonable conclusions in this aspect of the matter:

    (a) the GIC knew that the WPQ JRP report did not provide a specific SAEE finding or analysis of matters other than CCV in respect of which the JRP had expressed concerns;

    (b) the GIC knew or would have known that if, for any reason, its decision to reject approval for the project based on CCV was found to be invalid or otherwise inappropriate, their legal pre-requisite for rejecting approval of the project would no longer exist;

    (c) the GIC was aware that it had the opportunity and right to require the JRP to elaborate, explain or further consider the matters before it, including to ask the JRP to reach a conclusion as to whether SAEE was likely to result from other aspects of the project, but the GIC did not choose to require any of these; and

    (d) despite what the GIC knew as set out in (a), (b) and (c) above, the GIC chose to regard the JRP report as complete and in compliance with CEAA.

23. All of the above factors are in my opinion materially relevant to a reasoned conclusion that it would be both inappropriate as well as legally problematic for Canada to be given approval by this Tribunal to reopen all of these matters.

Irrelevance Factor No. 4: A further basis for regarding prognostications as to other possible SAEE that might be found as irrelevant is that these are matters that could have been raised by Canada, but were not raised, as a defence to the Jurisdiction and Liability phase of the Arbitration. In that context they may be found not only irrelevant but also to offend fundamental legal principles such as issue estoppel and res judicata.

24. I concur with Mr. Connelly's analysis that the GIC could not have made a decision to accept the recommendation of the WPQ JRP without it and DFO as the RA being satisfied both that the JRP Report was complete and that "it meets the requirements under the Act and that it requires no further studies such that it can render a decision on the project", which are the criteria he references in paragraph 72 of his witness statement.

25. Of course the GIC and the RA in the WPQ did act on the JRP report as they found these clear prerequisites for doing so had been met, *i.e.*, that the WPQ JRP report was complete and met the requirements of CEAA.

26. The record in this matter is clear – the only significant adverse environmental effect identified by the JRP in respect of the Whites Point Quarry Project was CCV – a factor that had no legal relevance under the CEAA. It was a factor that was, in any event, unfairly applied in the process.

27. As Ms. Griffiths herself affirms, her opinions are premised on there being a further CEAA review panel analysis, albeit hypothetical: "it would be reasonable for a JRP, if required to revisit the findings in the White Point JRP because of the NAFTA breach, and on the basis of the public record, to find that the project would likely result in specific significant adverse environmental effects under CEAA" other than CCV.

28. The assumption inherent in Canada's reports, that there could be further consideration of the Whites Point Project by a CEAA review panel process, is also a legal non-starter. The legal significance of the fact that, as affirmed by Mr. Connelly's conclusion, the GIC and RA were required to determine prior to making their decisions that the WPQ JRP Report was complete and provided a full basis for it to be acted on, is that these issues cannot be reopened in proceedings involving the same parties.

29. Given Mr. Connelly's explication as to the detailed prerequisites for decision-making by the GIC and RA that led to them accepting that CCV was the foundational basis for their rejecting approval of the WPQ project, it would be contrary to these legal principles for Canada and its witnesses to be allowed, even hypothetically, to suggest the GIC had <u>other</u> valid reasons for rejecting the project.

30. In an approach similar to that of Ms. Griffiths and Dr. Blouin, the witness statement from Peter Geddes, for many years a senior official with Nova Scotia Ministry of Environment, also seeks to have this Tribunal reopen its determination that CCV was the basis for Nova Scotia rejection of the project and to have this Tribunal adjudicate that the Nova Scotia Environment Minister was entitled to consider other factors than found in the JRP report.

31. In his witness statement, Mr. Geddes states "in my role as Environmental Assessment Administrator, I arranged for a briefing with the Minister to review the process, the issues raised during the assessment, the panel recommendations and the Minister's options for a decision". Mr. Geddes continues: "<u>In making a decision the Minister may request further advice from the Department on matters raised in the report and consider that additional advice in rendering a decision</u>. The Minister may determine that there is inadequate or unclear information in the report and asks staff to provide further analyses. <u>Panel reports conclusions and recommendations are not binding on the Minister</u>, although the Minister

takes into account the Panel's findings in coming to a decision".[13] He continues with this statement: "a JRP Report, as with other panel assessment reports, is considered by the Minister in his or her decision-making. . . . In practice the Minister's decision-making process is not limited to consideration of just the JRP Report."[14]

Irrelevance Factor No. 5: Assertions by Mr. Connelly that with CCV struck out, the JRP report on WPQ "would not be judged sufficient to satisfy the requirements of the Act" and by Ms. Griffiths that "it does not necessarily follow that in the absence of the NAFTA breach the JRP report would have provided federal decision-makers with findings and recommendations that were supportive of project approval" should also be seen as irrelevant for the reasons elaborated below.

32. First, Mr. Connelly makes an unsupportable and unreasonable assertion in paragraph 89 of his report to the effect that, assuming references to CCV were struck out, the JRP report "would not be judged sufficient to satisfy the requirements of the Act because it would include no conclusion on the likely significance of the environmental effects it was mandated to assess". He speculates that such a report would have been sent back for clarification or would have led to a request for additional information.

33. While the GIC would indeed have the authority to ask for clarification, it would not have the authority thereafter to stop the RA from issuing the requested *Fisheries Act* authorization in that no relevant SAEE had been found likely by the JRP. As this Tribunal has already noted:

> "The Report expressly identifies only one effect of the project as both significant and adverse, namely 'inconsistency with community core values'. With respect to other impacts of the project, the Panel allowed that 'with the effective application of appropriate mitigation measures, competent project management and appropriate regulatory oversight, most project effects should not be judged "significant"'.[15]

34. Mr. Connelly's assertion misinterprets the essential requirement of CEAA; the proponent does not have any onus to prove that its project will not have SAEE. If no SAEE is found likely by the JRP, the project clears CEAA as the GIC has no right nor any residual discretion to do anything other than seek clarification. In the absence of a JRP finding of SAEE, the GIC has no authority nor discretion to interfere with the RA processing Bilcon's requested *Fisheries Act* authorization that triggered the CEAA process.

35. Ms. Griffiths makes a similar argument, that the JRP had not actually concluded its work. Although she quotes the Tribunal's observation set out above that CCV was a primary factor, she goes on to opine that the JRP had not actually completed its analysis "with regards to the other elements of the project", and then asserts "it does not necessarily follow that in the

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[13] Geddes report, at paras. 16 and 17 (emphasis added).

[14] *Ibid.*, para. 24 (emphasis added).

[15] Award, at para. 503.

absence of the NAFTA breach the JRP report would have provided federal decision-makers with findings and recommendations that were supportive of project approval".

36. Like Mr. Connelly, Ms. Griffith's critique is out of focus. In the absence of a finding by the JRP of SAEE, there was only one federal decision-maker, the RA, which in this case was DFO, which had to determine whether to grant a *Fisheries Act* authorization for minor fish habitat disturbance that would be associated with construction of the shipping dock. (Mr. Connelly was mistaken that Transport Canada (TC) was also an RA; TC had determined very early in the process that a *Navigable Waters Protection Act* permit, which was a CEAA trigger, was required for the ship dock, but on January 10, 2006, well prior to the JRP process commencing, TC notified Bilcon that it had determined otherwise.)[16] The GIC would not have a "decision-making" role unless the review panel had found there was likely to be (legitimate) SAEE, which is not what the JRP found. As Bilcon and DFO had already communicated about that authorization, there was in place a preliminary understanding that the authorization would be issued, conditional upon Bilcon entering into the usual type of agreement for fish habitat compensation.[17]

Irrelevance Factor No. 6: The expert opinions, to the effect that the WPQ JRP report is a deficient basis for approvability of the WPQ and that there are, in the opinion of these witnesses, effects that if further considered could be found to be SAEE, are also irrelevant and merit no consideration by this Tribunal since their premise is in conflict with rulings of the Federal Court of Appeal as to when a JRP report is or is not sufficient.

37. The Federal Court of Appeal has, in the 2015 "*Greenpeace Case*",[18] rejected the premise that a CEAA panel report is deficient because it does not include an analysis with respect to the potential for SAEE arising from each and every possible project effects. It also rejected the argument that such alleged deficiencies merit further hearings or can vitiate decisions already made based on alleged review panel findings. Rather, the Federal Court of Appeal has affirmed that a review panel report that gives "some consideration" to factors set out in CEAA is sufficient in order for it to be validly used by the GIC and RA as a basis for issuing federal statutory approvals, such as Bilcon's requested *Fisheries Act* authorization. The court ruling makes clear that a JRP report does not need to contain findings on whether every theoretical effect raised constitutes SAEE in order for it to be validly used by the GIC and RA for decision making.

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[16] January 10, 2006 letter from Transport Canada "To Whom it May Concern" attaching stamped plans for the proposed ship terminal, C-1027.

[17] See Exhibit C-136 DFO letter, dated November 24, 2005, to Paul Buxton.

[18] Ontario Power Generation (appellant) v Greenpeace Canada (also heard with Attorney General of Canada, appellant v Greenpeace Canada), [2015 FCA 186].

38. In the *Greenpeace Case*, the Federal Court of Appeal overturned portions of a judicial review ruling that had accepted some of the grounds for judicial review that had been previously asserted by a number of environmental organizations. The applicants challenged a JRP report and recommendations for approval of four new nuclear reactors at the Darlington Nuclear Generation Station in Ontario as well as the licences issued following the panel review by the Canadian Nuclear Safety Commission. The application for judicial review asserted that, among other things, the JRP:

- failed to assess the factors set out in ss. 16(1) and (2) of CEAA and in the agreement establishing the panel terms of reference
- unreasonably constrained its assessment of the factors in s. 16 and the environmental effects of the project
- failed to assess the environmental effects of the proposed project over its entire lifecycle as required by s.15(3)
- failed to meet the information gathering and reporting requirements in s. 34
- failed to comply with s. 4(2) in carrying out its duties under s. 4(1)
- failed to comply with the JRP's terms of reference

39. The applicants sought, among other things, a declaration that, as the environmental assessment and the JRP report failed to comply with the Act and the agreement, the consequence should be that the GIC had no authority s. 37(1.1) of CEAA to approve the JRP report and the applicants also sought an order prohibiting and setting aside any authorizations, licenses or other actions by responsible authorities that would allow the project to proceed.[19]

40. In the first instance ruling, Justice Russell of the Federal Court granted, in part, the application for judicial review. He agreed essentially with the applicants' arguments that the EA process carried out, including the panel report, was deficient. For example, he questioned whether the panel had carried out its obligations under the Act when the panel relied upon a future assessment by the proponent to confirm that various commitments, recommendations and regulatory controls ensured that the project did not have SAEE. He also questioned whether this complies with the panel's obligations under the Act to consider the environmental effects of the project and their significance pursuant to ss. 16(a) and (b) of the Act.

[19] B. Hobby, Canadian Environmental Assessment Act, an Annotated Guide (Canada Law Book) 2005; as updated on Thomson Reuters Proview

41. However, on appeal, a majority of the Federal Court of Appeal overturned Justice Russell's decision that the JRP panel failed to comply with CEAA.

42. The Court of Appeal agreed with the Justice Russell that reasonableness was the appropriate standard of review, but it then held that Justice Russell had misapplied the reasonableness standard of review by imposing his own opinion as to how the environmental effects of hazardous substances and emissions ought to have been considered by the panel.

43. Importantly, the Court of Appeal held that the type and level of consideration that must be given to an environmental effect in accordance with ss. 16(1)(a) and (b) of CEAA is a matter to be determined by the panel. It found that reasonableness was a "low threshold", with the consequence that a review panel need give only "some consideration" to the environmental effects of the project in order to be found reasonable.

44. The Court of Appeal explained that it is only where a review panel gives "no consideration at all" to the environmental effects that its assessment will be deemed unreasonable. The Court of Appeal reasoned as follows:

> 123. In the circumstances, the Panel made no specific finding that it had complied with the consideration requirements in paragraphs 16(1)*(a)* and *(b)* of the Act. However, it is our view that in conducting the EA and preparing the EA Report, the Panel must be taken to have implicitly satisfied itself that it was in compliance with those statutory requirements. In applying the reasonableness standard to this question, we must consider the Panel's decision as a whole, in the context of the underlying record, to determine whether the Panel's implicit conclusion that it had complied with the consideration requirements is reasonable (see *Agraira*, at paragraph 53).

45. The Federal Court of Appeal reached this conclusion in a manner consistent with previous Federal Court rulings which it then referenced:

> The Consideration Requirements
>
> 124 **The consideration requirements in paragraphs 16(1)(a) and (b) of the Act have been interpreted by the Courts**.
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> 125 In Friends of the West Country Assn. v. Canada (Minister of Fisheries & Oceans) (1999), [2000] 2 F.C. 263, 248 N.R. 25 (Fed. C.A.) [Friends of the West Country Assn], Justice Rothstein stated at paragraph 26:
>
> > **The use of the word "shall" in subsection 16(1) indicates that <u>some consideration</u> of each factor is mandatory** [Emphasis added by FCA]
>
> 126 **We also endorse the finding of Justice Pelletier at paragraph 71 of Inverhuron & District Ratepayers' Assn. v. Canada** (Minister of the Environment) (2000), 191 F.T.R. 20, [2000] F.C.J. No. 682 (Fed. T.D.) (QL) **[Inverhuron], as follows**:
>
> > 71 It is worth noting again that the function of the Court in judicial review is not to act as an "academy of science" or a "legislative upper chamber". In

> dealing with any of the statutory criteria, the range of factual possibilities is practically unlimited. No matter how many scenarios are considered, it is possible to conceive of one which has not been. The nature of science is such that reasonable people can disagree about relevance and significance. **In disposing of these issues, the Court's function is not to assure comprehensiveness but to assess, in a formal rather than substantive sense, whether there has been some consideration of those factors in which the Act requires the comprehensive study to address. If there has been some consideration, it is irrelevant that there could have been further and better consideration**. [Emphasis added by FCA]

127 **Having regard to this jurisprudence, and in the absence of any specific stipulation to the contrary in the Panel Agreement, Terms of Reference and EIS Guidelines, it is apparent that the Panel was at liberty to determine the type and level of consideration that it was required to give to the HSE environmental effects in conducting the EA and in preparing the EA Report**. [emphasis added]

128 The Judge appears to have reached the same conclusion with respect to the level or type of the consideration requirements in subsections 16(1) and (2) of the Act. He acknowledged that the "form and extent" of any such consideration was not stipulated in the Act and that the Panel is "required to use its expertise to gauge the extent and form of 'consideration' required in each particular case" (Reasons at paragraph 195).

129 In addition, at paragraph 198 of the Reasons, the Judge confirmed that it is not the role of the Court to assess and reweigh the methodology and conclusions of an expert panel, stating:

> [198] **In attacking the EA Report as inadequate, the Applicants are to a considerable extent asking the Court to assess and reweigh the methodology and conclusions of an expert panel. This is not the role of the Court. It is true that s. 16(1) and (2) of the CEAA mandate the "consideration" of certain factors, but the way this is done and the weight to be ascribed to each factor is left to the expert Panel to be assessed in accordance with the purposes of the Act**. [Emphasis added by FCA]

130 It has not been asserted by any party to the appeals that the Panel Agreement, Terms of Reference or EIS Guidelines required, or the Panel itself stipulated, any particular type or level of consideration that it would give to the HSE environmental effects. **Thus, in our view, the type or level of consideration that the Panel was required to give to those effects was simply** that which is mandated in Friends of the West Country Assn. and Inverhuron, namely, **"some consideration." It follows, in our view, that a failure of the Panel to consider the HSE environmental effects can only be established if it is demonstrated that the Panel gave no consideration at all to those environmental effects**. [Emphasis added]

46. Applying this jurisprudence to WPQ, it is clear from the JRP report that the JRP did give at least "some consideration" to a wide range of possible environmental effects that could arise in the WPQ project. In fact, expert reports by Ms. Griffiths and Dr. Blouin rely on many of

these possible effects as their starting point to argue that the project would not receive a positive recommendation by a panel in the absence of CCV.

47. It is telling that neither the *Greenpeace* nor *Inverhuron* decisions nor any others in that line of authority relied on by the Federal Court of Appeal, and not even the essential principles of these cases, are referenced in the speculative concerns raised by Ms. Griffiths, Dr. Blouin and endorsed by Mr. Connelly. These cases demonstrate that Canada's premise and that of these expert witnesses is invalid. Canada and its witnesses premise their fundamental argument on a theory of environmental assessment that has been rejected by the Federal Court of Appeal. Reading out CCV from the JRP report does not render the JRP report an invalid basis for the GIC and the RA to act because it is clear that the JRP did in fact give "some consideration" to a plethora of other possible effects that they referenced in their report.

48. The Federal Court of Appeal decision in *Greenpeace* and other Federal Court rulings should clearly assist this Tribunal to conclude that there is no valid legal basis for accepting the relevance of speculations by Canada's witnesses as to other impacts that could be found, nor is there a relevant basis for this Tribunal to consider the legal opinion asserted by non-lawyers such as Mr. Connelly that the JRP report – with CCV read out – is an insufficient basis for a GIC decision.

49. These Federal Court rulings demonstrate that the JRP report, even without the CCV factor, is complete in the sense that it canvassed a plethora of issues, gave "some consideration" to each of them and did not find SAEE to be likely in respect of any of them.

PART 1B: UNRELIABILITY CONCERNS IN THE DISMISSAL BY CANADA'S EXPERTS OF THE RELEVANCE THAT NO GOVERNMENT EXPERTS FOUND SAEE IN WPQ

It is a key and relevant factor in considering the approvability of WPQ that no government official told the JRP that any component of the Project would likely cause SAEE or adverse environmental effects. This part replies to Canada reports that misleadingly assert otherwise.

PREFACE

50. In this Part 1B, I identify what I consider to be unreliable key assertions in the expert reports of Ms. Griffiths and Mr. Connelly, which are also supported by the other two witnesses for Canada (Mr. Geddes and Dr. Blouin). I document why these assertions are unreliable, especially since they directly conflict with the experiences of Ms. Griffiths and Mr. Connelly when they served as panel chairs, as well as conflict with what occurred on this issue in the WPQ JRP proceedings. In my view, their assertions are not only unreliable, but misleading and erroneous.

51. The unreliable assertions are linked:

    (a) that a Key Factor I identify in my March 2017 Expert Report as to why there is no reasonable basis for WPQ to not be approved by Canada and Nova Scotia – that no government expert told the JRP that SAEE or adverse environmental effects would occur – is irrelevant, because:

    (b) review panels do not ask government experts to express opinions about whether project-related environmental effects are likely to be adverse or significant, and that, indeed, it would be improper for government experts to provide such opinions to a review panel.

52. Mr. Connelly puts it bluntly in the following terms:

> "No inference on environmental effects can be drawn from the fact that no department identified significant adverse environmental effects during the JRP review. The fact that no government official had taken the position, before the JRP, that the White's Point project should not be approved is irrelevant. It is not the practice of Federal authorities to take a position on the significance of environmental effects before a JRP – in fact, their taking such a position could even be invoked as a sign of bias."[20]

53. However, as I demonstrate below, these assertions are contradicted by the direct experience of Ms. Griffiths and Mr. Connelly when they served as CEAA review panel chairs. In that role they have both invited and given full attention to expert government opinions on the likely

[20] Report of Robert Connelly, at para. 45 (emphasis added).

environmental effects of projects and their significance in arriving at their panel recommendations. Yet in proffering their assertions on this issue to this Arbitral Tribunal, they have failed to refer to their direct experience on these matters, and have likewise failed to reference that the WPQ JRP panel itself did exactly that which these witnesses opine is something that must never be done in such hearings. Ms. Griffiths' practice as a panel chair in doing this continues even into 2017. This Tribunal should have regard to what these witnesses have done in practice as panel chairs, as their practice demonstrates both that my key factor is indeed relevant, and also demonstrates that what they state to this Tribunal on this matter in their expert reports is unreliable, and indeed inexplicable, misleading and erroneous.

DETAILED ANALYSIS

54. In my March 8, 2017 Expert Report for this Phase of the Tribunal hearing, I concluded a Key Factor for this Tribunal to consider in determining that there was no legally valid basis for the GIC or Nova Scotia to deny approval of the WPQ was the following:

> "No federal or provincial official or agency told the JRP that the WPQ would after mitigation, likely cause significant adverse environmental effects as defined in CEAA; nor did any of these officials state that the WPQ would cause 'adverse effects' or 'environmental effects' as defined by the NSEA that cannot be mitigated."[21]

55. Canada has filed four expert reports, each of which responds to this finding. None of these witnesses ever state that they disagree with that factual conclusion, which I interpret to mean that they implicitly agree with my factual analysis, and in addition, that they could not find contrary government submissions to the WPQ.

56. Rather, these expert witnesses assert that the absence in the JRP record of government officials advising the JRP that negative effects were likely is irrelevant. They assert that rationale based on their "personal experience": government officials do not and are not expected to provide such environmental effect evaluations to review panels.

57. I have noted these rather bald assertions were made without any reference to actual panel review records. I was very surprised by these opinions as such assertions simply do not accord with the practice or the reality in such matters.

58. I was also surprised that these expert witnesses dismiss the relevance of the key factor I have identified without mentioning and considering in their reports that, contrary to their view that such procedures are not used, the WPQ JRP itself solicited expert opinions as to potential SAEE from government officials both in writing and orally as part of the WPQ JRP

[21] Estrin Expert Report March 2017, para. 115(ii).

proceedings. In dismissing the relevance of the lack of any statements adverse to the WPQ project, apparently none of Canada's expert witnesses appreciated or even knew that the WPQ JRP made specific written requests to government experts inviting them to assist it in identifying environmental effects and appropriate mitigation measures prior to the commencement of the JRP proceeding and that the JRP also asked government officials during the public hearing to provide or elaborate upon their views about environmental effects and their significance.

59. The contrary assertions by Canada's witnesses that this does not and should not happen in review panel hearings are further perplexing, given that their opinions are contradicted by their own clear experience in soliciting the same type of opinions from government officials about the potential for adverse effects when they chaired or participated in panel reviews.

60. Their dismissal of the relevance of such findings are contrary to the statutory obligation under the *Canadian Environmental Assessment Act.* Expert federal government departments routinely advise review panels related to the potential effects of a project within their area of expertise, and that there is a consistent practice of this happening, of which all of these witnesses would be well aware.

61. In order to assist this Tribunal on this matter, I provide below facts and quotations focussing on the assistance of government experts in identifying and providing expert impact assessment analysis and commentary to several JRPs in which Ms. Griffiths was chair or co-chair, one federal CEAA Panel review chaired by Mr. Connelly, and another JRP where Mr. Geddes was a panel advisor and which was chaired by Ms. Griffiths.

62. The facts and documents from these proceedings speak for themselves in demonstrating that the opinions that Mr. Connelly and Ms. Griffiths have filed with this Tribunal, stated to be based on their "personal experience", are untenable. They are contradicted by their actual practices and experience, as JRP chairs, in which they solicit, and listen, to such expert government opinions as to the significance of likely impacts. In some cases they rely on them in their panel recommendations (Ms. Griffiths and Mr. Connelly) or are part of the process in the provision of such opinions (Mr. Geddes). Put simply, their actual experience in soliciting and evaluating, and in some cases relying on expert assessment advice from government experts in CEAA review panels, is diametrically opposite to the what they suggest is their "personal experience" in their witness statements.

DISMISSAL BY MS. GRIFFITHS OF THE RELEVANCE OF NO GOVERNMENT EXPERT FINDINGS OF SAEE IN WPQ IS INCONSISTENT WITH HER REVIEW PANEL EXPERIENCE

63. In paragraph 39 of her report, Ms. Griffiths references the 2nd Key Factor I relied on in my March 2017 Expert Report as the basis for my conclusion that the WPQ was approvable and would be approved: "none of the many federal and provincial officials who made submissions to the JRP stated that the project was likely to cause any significant adverse environmental effects (SAEE) that could not be mitigated" and what she calls "his [my] suggestion" that therefore the Whites Point JRP could not have made a significance finding with respect to such effects.

64. She then states at paragraph 40 of her report:

> "In my experience as a panel member, government submissions do not include significance determinations for the basic reason that it is not the job of government departments to make significance finding in a panel review; it is the panel's job. Government departments understand and respect the mandate that has been given to the panel and do not attempt to usurp the panel's role. If in fact this was not the case during the public hearing I was chairing, I would likely, in consultation with my colleagues, explain my statements regarding significance determinations made by government representatives who are unnecessary and unhelpful, and would ask that they refrain from making and sharing these determinations."[22]

65. It is apparent from the juxtaposition of these comments immediately following my Key Factor quote that Ms. Griffiths is dismissing the relevance of my Key Factor "observation" – that none of the many officials who made submissions to the JRP stated that the WPQ was likely to cause adverse effects – based on her asserted "experience" that government submissions to panel reviews do not include "significance determinations".

66. In fact, my Key Factor did not refer to a "significance determination". I agree with her that it would be unusual and possibly inappropriate for one government expert or department to tell a panel that it had concluded that the project as a whole must be rejected because the project as a whole would likely result in SAEE because, as she has stated, that is the panel's role to determine, after hearing all submissions. So I agree that a panel chair would not expect to hear from one government expert or department that the whole project would result in SAEE. Nor would one government expert or department be expected to make such a project-wide "significance determination" to a review panel.

67. Ms. Griffiths' reference to a "significance determination" is therefore not a relevant or useful response to my observation. It is merely an unhelpful diversion. It is not what I was referencing in my Expert Report and she would know that.

[22] Griffiths Statement, para. 40 (emphasis added).

68. What I was referencing, quite clearly, was something that Ms. Griffiths knows very well to happen in every panel review under CEAA: the panel asks for and receives expert opinions from expert government scientists or departments as to whether the project under review is likely to have negative environmental effects on aspects of the environment (*e.g.*, caribou) that are within the expertise of that department or official, and if so, whether the expert can assist the panel in appreciating whether the environmental effect on that Valued Environmental Component (VEC) is likely to be significant or adverse and even then, whether there are measures that could be taken to mitigate such effects such that the net effect, with mitigation, is "non-significant".

69. In fact, in the same paragraph 40, she admits that she does look to government officials for "information about aspects of the project that would be regulated by their department, including information to help the panel understand to what extent the regulatory framework can ensure that significant adverse effects are avoided and where the gaps are; and scientific and technical expertise and experience that can help the panel and evaluate the proponent's predictions". (emphasis added)

70. She goes somewhat further in paragraph 55 of her expert report, where she seems to acknowledge she is very well aware of the importance of submissions from government experts, when she says: "In my experience a review panel uses detailed input from government departments and other interested parties . . . to determine the overall impact of the project and the residual effects". In this comment she is implicitly acknowledging, but still refusing to admit in her witness statement, that expert comments on effects and their significance within the expertise of a particular department are relevant for a panel to receive, as they assist the panel to determine the "overall impact" of the project.

71. What Ms. Griffiths would know, but did not reference in her expert report, is that there is a requirement in CEAA that imposes a clear legal obligation on "every" federal departments and agency "in possession of specialist or expert information or knowledge with respect to a project" that they "shall, on request, make available that information or knowledge to . . . a panel review". (CEAA s.12(3))

72. The importance of expert government opinions being made available to review panels on likely impacts and their potential significance to the issues before a panel cannot be overemphasized for two reasons: (a) not all panel members – and indeed sometimes none of the panel members – will necessarily have scientific or other expertise to reach objective conclusions as to the types of impact that would likely result from a project and whether such effects are "significant"; and (b) because review panels are usually not provided with their own expert advisors.

73. In order to overcome those issues, as will be detailed below, Ms. Griffiths is well aware that government experts are regularly invited to provide such comments to CEAA review panels (including JRPs). She knows this is done because all panel members are not expected to have, as she does not, specific scientific expertise in the particular issues associated with a project that could cause significant impacts, *e.g.*, what level and type of noise from a proposed airport could cause SAEE for migratory birds. Ms. Griffiths' biographical information contained in her witness statement indicates her post-secondary education is in English, Library Service and Environmental Planning and that although she has been involved in community interests that may be under consideration in many environmental assessment matters, she holds no degree in science or engineering. This is not atypical, however, as panel members are appointed to bring different background and experiences to the task. But as review panels are required to carry out an "objective" assessment of the likely SAEE, review panels must consider expert opinions from qualified scientists, engineers or other relevant experts in order to arrive at a recommendation that conforms to the expectation of the legislation:

> "The central test in the Act is whether a project is likely to cause significant adverse environmental effects. This determination is an objective test from a legal standpoint, which means that all decisions about whether or not projects are likely to cause adverse environmental effects must be supported by findings based on the requirements set out in the Act."[23]

74. Ms. Griffiths would also know that when a review panel is considering a private sector project, the opinions of government experts are particularly important and relevant to the review panel. Government experts can provide a clearly independent perspective on whether the specific impact predictions of a proponent are credible. They can also provide an evaluation that is independent from that of the proponent on whether the predicted impacts will be significant and adverse, on the one hand, and also whether a proponent's mitigation measures are sufficient.

75. This explication of the need for government experts to provide advice to review panels, bolstered by the legal duty under CEAA for these expert departments to provide their expert comments to review panels, is relevant for this Tribunal in appreciating why it is highly significant in evaluating the approvability of the WPQ that the JRP received no comments within the areas of expertise of various federal and provincial officials to the effect that the project was likely to cause SAEE or that such adverse effects could not be mitigated.

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[23] See Exhibit **C-384**, A Reference Guide for the Canadian Environmental Assessment Agency, section 1(3), page 183 (emphasis added).

76. In order to confirm that Ms. Griffiths, when she is acting as review panel chair, actively solicits expert government opinions on potential impacts and their significance, I set out below direct examples.

INCONSISTENCIES BETWEEN GRIFFITHS' OPINION AND HER PRACTICE AS A CEAA PANEL CHAIR

Lower Churchill Hydroelectric Project JRP

77. In 2011, Ms. Griffiths was the co-chair of the JRP for the Lower Churchill Hydroelectric Project in Newfoundland and Labrador. This project involved construction of two hydroelectric dams, with combined generating capacity of over 3000MW. In that JRP hearing, the review panel explicitly sought information on the effects of the project from various government departments. The panel was clear in its request that government departments identify impacts, risks and uncertainties of the project, and that they comment on the significance of any identified environmental effects. This direct experience of Ms. Griffiths as to the appropriate role of government officials in providing impact assessment comments to the review panel process, however, was never mentioned in her expert report filed with this Tribunal.

78. In the Lower Churchill proceeding, Ms. Griffiths as the JRP co-chair, together with the other co-chair, sent letters of invitation to a number of provincial and federal government departments that had a mandate related to the potential environmental effects of the project. These were:

- Provincial Department of Natural Resources;
- Provincial Department of Environment and Conservation;
- Transport Canada;
- Natural Resources Canada;
- Health Canada;
- Environment Canada; and
- Fisheries and Oceans Canada.

79. Ms. Griffiths' letters used standard language to request the respective department's views "on whether the EIS and supplemental information adequately identify impacts, risks and uncertainties of the project, including 'the significance of environmental effects'". (emphasis added)

80. The standard language in these letters is as follows:

> "The Panel has identified your department as having expertise that could assist the Panel in its determination of the significance of the effects of the Project. As per section 12(3) of the Canadian Environmental Assessment Act and section 7.1 of the Agreement Concerning the Establishment of a Joint Review Panel for the Environmental Assessment of the Lower Churchill Hydroelectric Generation Project, at the Panels request, a federal or provincial government department or agency shall provide information or knowledge when it has the expertise to do so. The Panel is interested in obtaining your department's views on whether the EIS and supplemental information adequately identify impacts, risks and uncertainties of the Project, including the significance of the environmental effects."[24]

81. Each of these letters contained a "Preliminary List of Issues Related to Federal and Provincial Departments Mandate and Expertise" in respect of which the JRP was seeking to have the specific departments' expert advice.[25]

82. For example, in the chart pertaining to Environment Canada, Ms. Griffiths' Panel sought expert advice in respect of a number of issues including:

- effects of water quality;
- impacts on wildlife;
- impacts of water quality on wildlife;
- impacts on drinking water supply and quality;
- impact determination and methodology for terrestrial ecosystems and species;
- specific impacts on terrestrial habitat types;
- impact determination and methodology on rare plants; and
- impact determination and methodology related to methyl mercury contamination.

83. Similarly, the chart indicates that Ms. Griffiths panel was seeking from Fisheries and Oceans Canada the following "required expertise":

- effects on aquatic ecosystems and fish and fish habitat . . .;
- effect on ice regime;
- effects on groundwater;

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[24] See, for example: Lower Churchill Hydroelectric Generation Project Joint Review Panel, *Letter to Mr. Charles Brown – Department of Natural Resources, Subject: Lower Churchill Hydroelectric Generation Project – Invitation to participate in the public hearing and prepare submission to Joint Review Panel*, (January 25, 2011) at p.1 [emphasis added] **(C-1404)**.

[25] Lower Churchill Hydroelectric Generation Project Joint Review Panel, Chart attached to letters from Panel Chairs as in previous footnote **(C-1404)**.

- effects downstream from Muskrat Falls;
- effects of transportation of materials and vessel traffic (*e.g.*, port traffic) on fish and fish habitat; and
- mitigation and compensation plan and strategy.

84. From Transport Canada Ms. Griffiths' Panel sought:

- effects on river navigation and from vessel traffic through the port of Goose Bay;
- impacts on air traffic; and
- mitigation, monitoring and follow up measures.

85. From Natural Resources Canada, Ms. Griffiths' Panel sought expert advice with respect to a number of matters including:

- slope stability and mass movement;
- fate of mercury in aquatic and terrestrial systems from reservoir preparation and flooding;
- impact determination and methodology related to methylmercury contamination; and
- hydrogeology impacts (*e.g.*, groundwater contamination, saltwater intrusion).

86. From Health Canada, Ms. Griffiths' Panel sought expert advice with respect to matters such as:

- impact determination and methodology related to methylmercury and bio accumulation implication on human health;
- human health risk assessment and fish consumption public advisories; and
- impacts on drinking water supply and quality.

87. From the Provincial Environment and Conservation Department Ms. Griffiths' Panel sought expert advice with respect to such matters as:

- project impacts on terrestrial ecosystems;
- specific impacts on terrestrial wildlife species (riparian, woodland and wetland habitat); and
- impacts to groundwater quality, drinking water supply and quality and alternative water sources.

88. I find it perplexing that at paragraph 40 of her expert report Ms. Griffiths attempts to dismiss the relevance of my pointing out that in WPQ there were no submissions from government experts that SAEE or adverse effects were likely, while she and her co-chair in the Lower

Churchill project clearly recognized the relevance of her panel obtaining expert opinions on such issues.

89. Government submissions made in response to the request from Ms. Griffiths' Lower Churchill Panel did indeed provide expert advice on the environmental effects of the project.

90. Environment Canada's written submission explicitly provided an opinion on SAEE:

> "Overall, if the project and associated mitigation activities are well executed, **Environment Canada expects there will not be any significant adverse effects on environmental matters within the Department's mandate**. Furthermore, execution of this project could have a beneficial environmental impact through its potential to offset greenhouse gas emissions."[26]

91. Clearly, Ms. Griffiths would have known, even from this one response, that expert government departments do in fact provide their views on whether SAEE is or is not likely "within the Department's mandate". Why she chose to dispute the relevance of my observation for the WPQ project on this very type of matter is puzzling.

92. In DFO's submission in response to Ms. Griffiths' letter, expert advice on environmental effects of the Project was likewise provided. For example, in relation to effects of the Project's potential to entrain fish, DFO advised that the Project may result in injuries or mortalities:

> "The assumption that fish movement patterns will remain the same in the slower velocity environment of the reservoirs as in the current high velocity river environment introduces a high degree of uncertainty with respect to the overall analysis and predictions on impacts of entrainment**. It is possible that injuries and mortalities from entrainments could have more significant effects on fish populations than predicted. There may be a requirement to implement additional mitigation measures to reduce entrainment mortalities**."[27]

93. Provincial government departments also provided expert opinions as to the significance of the project effects. For example, in its presentation to the Panel regarding the threatened caribou population, the Newfoundland and Labrador Department of Environment and Conservation opined that the significance of the effects of the project should be further considered:

> "However, prior to winter incursions of George River caribou, we have gone out and counted the number of individuals associated with all collared animals to get an idea of the minimum population size that might be in this population and those counts suggest that the population is still within that range. We feel that the significance of

[26] Environment Canada, Lower Churchill Hydroelectric Generation Project – Departmental Submission and Presentation, (February 21, 2011) at p.6. **(C-1405)** (emphasis added).

[27] Department of Fisheries and Oceans, *Lower Churchill Hydroelectric Generation Project – Department of Fisheries and Oceans Submission to the Joint Review Panel*, (February 21, 2011) at pp. 29-30 **(C-1406)** (emphasis added).

> project effects should be considered in light of the small population size of this herd."[28]
>
> . . .
>
> In summary, we concur with the Proponent in acknowledging adverse effects of this development on Red Wine Mountain Caribou, however cannot agree that the level of certainty regarding project effects as non-significant is high.[29]

94. In addition to seeking expert written submissions on the Lower Churchill project impacts and their significance, Ms. Griffiths did the same in a question she put to government experts appearing before her JRP. For example, she explicitly solicited expert advice from the DFO related to the significance of the environmental effects of the Project. Here is her questioning of the DFO representatives:

> Chairperson Griffiths
>
> "So, ultimately, we have to be concerned about the combined effect of all these things that will be happening to fish in the system. I mean, including what happens the moment you impound and the dewatering and those effects and the habitat changes and so on right through to the 20 years of high levels of mercury in the fish and so on.
>
> So we're very well aware of that. So a corollary it would seem is that you have to be very concerned, perhaps more concerned, about any individual effect that might happen because ultimately the fish are dealing with a combined effect.
>
> So that's my preamble about this.
>
> Can you please reflect a bit on what you see as being the risks of going ahead with impoundment at less than the optimum time?
>
> I mean, there are adverse effects on fish even if they do impound at the best time. Can you talk a little bit about that, and how crucial do you think it is that something be that the Proponent adhere to the proposed preferred time for impoundment?"[30]

95. During this hearing, Ms. Griffiths also asked for clarification from Environment Canada on the role of government departments arriving at conclusions regarding adverse effects of the Project. She was told, in clear terms, that Environment Canada was not offering a conclusion on whether the Project would proceed, but rather Environment Canada was providing expert advice as to the existence of SAEE:

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[28] Lower Churchill Hydroelectric Generation Project Joint Review Panel, Public Hearing, *Dr. Isabelle Schmelzer / Department of Environment and Conservation*, (March 17, 2011) Hearing Transcript Volume 13 at 260:18 – 261:2. **(C-1407)** (emphasis added).

[29] Lower Churchill Hydroelectric Generation Project Joint Review Panel, Public Hearing, *Dr. Isabelle Schmelzer / Department of Environment and Conservation*, (March 17, 2011) Hearing Transcript Volume 13 at 268:13-17. **(C-1407)**.

[30] Lower Churchill Hydroelectric Generation Project Joint Review Panel, Public Hearing, *Lesley Griffiths / Joint Review* Panel, (March 10, 2011) Hearing Transcript Volume 8 at 287:6 – 288:4. (emphasis added) **(C-1408)**.

> CHAIRPERSON GRIFFITHS: Would this be fairly standard practice when Environment Canada is engaged in a large environmental assessment process such as this one that you would, at the beginning, you know – well, in the middle of the process, that you would reach a conclusion about the merits of the project or the acceptability of the project from Environment Canada's perspective which you appear to have done on that last slide? Is it a –
>
> MR. CORKUM (Environment Canada): I would like to address that.
>
> We certainly haven't reached conclusions about whether or not this project should proceed. There are many other factors that must be considered.
>
> We have simply looked at the issues that fall within our departmental mandate and are simply answering the question of whether we are satisfied that there was sufficient analysis and information presented to indicate to us, for those areas that we're responsible for, that have − have there been significant adverse effects indicated that cannot be mitigated.
>
> So, as far as the merits of the project, other factors that must be considered, other impacts that definitely must be addressed, we're not commenting on those.
>
> Those are outside of our area of expertise and mandate and really must be left to those that have the appropriate expertise to address.[31]

Marathon Platinum Group Metals and Copper Mine Project JRP

96. Ms. Griffiths was appointed as chair for a JRP responsible for assessing the potential environmental effects of the proposed Marathon Platinum Group Metals and Copper Mine Project in Ontario. Prior to this project being suspended or abandoned in October 2014, Ms. Griffiths as JRP chair, sent letters in December 2013 to a number of federal and provincial government agencies asking that they participate in the public hearings and present the respective departments' "views on the project and its environmental effects to the panel".

97. Letters were sent to the following federal departments:

- Environment Canada;
- Parks Canada;
- Natural Resources Canada;
- Ministry of Aboriginal Affairs and Northern Development Canada;
- Department of Fisheries and Oceans; and
- Health Canada.

[31] Lower Churchill Hydroelectric Generation Project Joint Review Panel, Public Hearing, *Lesley Griffiths / Joint Review* Panel, (March 5, 2011) Hearing Transcript Volume 4 at 208:7 – 209:14 **(C-1409)** (emphasis added).

98. Similarly, letters were sent to Ontario agencies:

- Ministry of Environment;
- Ministry of Northern Development and Mines;
- Ministry of Aboriginal Affairs; and
- Ministry of Natural Resources.

99. As JRP Chair, Ms. Griffiths wrote as follows:

> "The purpose of this letter is to invite [Fisheries and Oceans Canada] to attend the public hearing and present its views on the project and its environmental effects to the panel. The panel is aware of the expertise that exists in Fisheries and Oceans on matters associated with the environmental assessment of the project. Therefore, the panel, in accordance with Section 20 of the Canadian Environmental Assessment Act, 2012 as is outlined in Sections 5.1 and 5.3 of its terms of reference, requests the participation of Fisheries and Oceans Canada in a public hearing."[32]

100. Each invitation letter also requested further detailed expert advice as to potential environmental effects. For example, the standard language Ms. Griffiths used was as follows in her letter to DFO:

> "The panel invites [Fisheries and Oceans Canada] to present its technical review on the **potential environmental effects of the project** and to provide information and recommendations to the panel as they relate to the department's expertise and mandate. Specifically the panel is interested in the department's expertise on the following:
>
> - the potential effects of the project
> - the proposed mitigation and compensation measures
> - the conclusions reached by the proponent regarding the significance of the effects
> - the proposed monitoring and follow up programs
> - the extent to which concerns raised by your department during its review of the proposed project have been addressed
> - recommendations for how best to address any remaining concerns."[33]

101. Further, the invitation letters to these various departments reminded each department that the panel expected "sufficient information and an analysis should be provided to support [the

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[32] See, for example, Joint Review Panel – Marathon PGM – CU Mine Project, *Marathon Platinum Group Metals and Copper Mine Project – Invitation to participate in the public hearing*, sent from Lesley Griffiths / JRP to Dave Burden / Department of Fisheries and Oceans, (December 30, 2013) **(C-1410)** (emphasis added).

[33] *Ibid*. (emphasis added).

department's] conclusions and recommendations, particularly if they differ from those presented by Stillwater Canada Inc. or other participants".

Milton Logistics Hub Project JRP

102. In this 2017 current Federal-Ontario panel review, Ms. Griffiths, as Panel Chair, has continued her practice to "require" the participation of expert federal and provincial agencies to "assist the Panel's deliberations" in carrying out a review of the project "consistent with CEAA 2012". More specifically, her letters of January, 2017 to these agencies state:

> "The Review Panel requires the participation of [Fisheries and Oceans Canada] in the joint review process in order that your Department's knowledge and expertise will be available to assist the Panel's deliberations. . . . The Review Panel also requests that your Department evaluate the EIS and associated records related to its mandate and areas of expertise. As early as practicable, the Review Panel asks [Fisheries and Oceans Canada] to determine whether there is sufficient valid information for the Department to provide advice to the Review Panel on:
>
> - **The likelihood that the Project would cause significant adverse environmental effects**;
> - The predicted effectiveness of the proposed mitigation measures; and
> - The appropriateness of the proposed follow-up programs."[34]

103. Again, it is puzzling and inconsistent for Ms. Griffiths to have asserted that it was irrelevant for me to have observed in my Expert Report that it was a key factor that were no submissions from government departments or agencies to the WPQ JRP as to that project likely resulting in SAEE or adverse environmental effects within the commenting agency's mandate or expertise, when she as a JRP Chair herself continues, as in the Milton Logistics Hub Project, to solicit government agencies to provide advice to the Review Panel on "the likelihood that the Project would cause significant adverse environmental effects".

DISMISSAL BY MR. CONNELLY OF THE RELEVANCE OF NO GOVERNMENT EXPERT FINDINGS OF SAEE IN WPQ IS INCONSISTENT WITH HIS REVIEW PANEL EXPERIENCE

104. Mr. Connelly's witness statement does not dispute my finding that there were no federal or provincial submissions to the Whites Point Quarry JRP establishing that any government agency had concerns that there may be significant environmental effects arising from the project.

[34] January 6, 2017 letter from Milton Logistics Hub Project Review Panel to Fisheries and Oceans Canada (**C-1411)**.

105. Rather, he dismisses the relevance of that opinion in the following terms:

> "No inference on environmental effects can be drawn from the fact that no department identified significant adverse environmental effects during the JRP review. The fact that no government official had taken the position, before the JRP, that the White's Point project should not be approved is irrelevant. It is not the practice of Federal authorities to take a position on the significance of environmental effects before a JRP – in fact, their taking such a position could even be invoked as a sign of bias".[35]

106. In the same paragraph, Mr. Connelly then goes on to quote his own December 2, 2011 expert report, in which he said, "federal government departments typically do not provide views on whether predicted effects are likely to be significant and adverse".

107. I am surprised that Mr. Connelly has been so vehemently dismissive of the relevance of my opinion in WPQ on this subject, particularly when I compare his remarks to what he did to the contrary in 2010 as the Federal CEAA Review Panel Chair for the Prosperity Gold-Copper Mine Project.

108. Transport Canada provided comments to the Prosperity Copper-Gold Mine Project Federal Review Panel, which Mr. Connelly chaired. It concluded that "the Prosperity Gold-Copper Mine Project as proposed **will lead to significant adverse effects on navigation** unless Taseko Mines Ltd. provides technically and economically feasible measures that will mitigate impacts on navigation".[36] (emphasis added)

109. In its written submission, Transport Canada indicated the purpose of its comments to the Review Panel chaired by Mr. Connelly was to "provide additional analysis of the impacts of the projects . . . in the following areas of interest to Transport Canada: boating activities, fishing activities, recreation activities and mitigation measures".[37]

110. With respect to impacts on navigation, Transport Canada stated in its submission to the Federal Review Panel:

> "Without effective mitigation for impacts on navigation, the Project will lead to significant adverse effects due to the total elimination of navigation in Fish Lake and portions of Fish Creek."[38]

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[35] Connelly Report, para. 45 (emphasis added).

[36] Transport Canada, *Transport Canada's submission for the topic-specific sessions of the public hearings (From Transport Canada to Review Panel*), (April 16, 2010), at p.18, available on CEAA Registry at: http://www.ceaa-acee.gc.ca/050/documents/42539/42539E.pdf> **(C-1412)**.

[37] *Ibid.*, at p. 4.

[38] *Ibid.* (emphasis added).

111. In the Report prepared by Mr. Connelly's Prosperity Gold-Copper Mine Project Federal Review Panel,[39] his Panel concluded that the project would result in SAEE on navigation, on fish and fish habitat, and on current use of lands and resources for traditional purposes by First Nations and on cultural heritage.

112. Mr. Connolly's panel's specific findings as to the likelihood of SAEE occurring in respect of navigation clearly accepted and relied on the expert advice and assessment of Transport Canada that the project would have significant adverse effects on navigation.

113. Section 7.2.3. of Mr. Connelly's Panel report, headed "Panel's Conclusions and Recommendations" begins as follows:

> "In reaching its conclusion on the effects of the Project on navigation, the Panel considered the following factors to be particularly relevant . . . Transport Canada indicated that the Project would cause significant adverse effects on navigation." (emphasis added)

114. The panel's conclusions continued:

> "The Panel notes Transport Canada's concerns about how the Project would interfere with navigation and the lack of suitable mitigation to compensate for these losses. The Panel also notes Transport Canada's assertion that Prosperity Lake would not adequately mitigate the losses of the fishing and recreational experience and the use by First Nations of the area. Transport Canada linked these issues to navigation. The Panel notes that the Project's effects on navigation in the absence of effective mitigation measures would be high magnitude and irreversible. Therefore, the Panel agrees with Transport Canada's conclusion that the Project would have a significant adverse effects on navigation."[40]

115. It is apparent that Mr. Connelly's statements in paragraph 45 of his Witness Statement that "it is not the practice of federal authorities to take a position on the significant adverse environmental effects before the JRP" and that "taking such a position could even invoke a sign of bias" are contradicted by his actual experience, as Chair of the Prosperity Federal Review Panel. As panel Chair he did not reject the written and oral submissions of Transport Canada as being biased – even though Transport Canada concluded there would be significant adverse environmental effects on navigation. Rather, he accepted those submissions and relied on them: "the panel agrees with Transport Canada's conclusions that the project would have a significant adverse environmental effect on navigation".

116. The practice of expert federal agencies providing comments with respect to adverse effects continued in 2011 and 2012 as demonstrated in documents from the New Prosperity Mine

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[39] Exhibit **C-728**, which is the July 2, 2010 *Report of the Federal Review Panel established by the Minister of the Environment regarding Taseko Mines Ltd. Prosperity Gold-Copper Mine Project*. See pg. 2 and also the signature page of the report which follows page 248.

[40] Prosperity Report, p. 158 (emphasis added).

Project CEAA process. Following the rejection of its original Prosperity Mine Proposal, a revised project was submitted for approval under the CEAA. This project was referenced as the "New Prosperity Gold-Copper Mine Project". The Environmental Assessment for this new project commenced in November 2011 and was also referred to a review panel. Again, Federal expert agencies were asked to provide comments to the review panel.

117. For example, in that Panel review hearing, Natural Resources Canada ("NRCan") commented as follows: "the likely long-term discharge of tailings pore water to Big Onion Lake would adversely impact water quality in the lake".[41]

118. In a letter dated August 16, 2013, addressed to "Panel Chair and Members c/o Livain Michaud, Panel Manager, Canadian Environmental Assessment Agency," the Regional Director General of the Pacific Region of Transport Canada provided an "Addendum to Transport Canada's July 19, 2013 written submission".[42]

119. In that addendum, Transport Canada had the following findings:

> TC Finding No. 3:
>
> "Based on the information made available . . . mitigation measures for indirect effects to navigation do need to be revisited. The suggested mitigation measures put forward in the Environmental Impacts Statement do not address the loss of Little Fish Lake and the surrounding waterways, of which some waterways may be navigable…The mitigation measures presented on p. 1183 of the EIS lack detail and facilitate further discussion regarding potential mitigation measures. However, these mitigation measures are not adequate for the impacts to navigation on Little Fish Lake and adjoining sections of Fish Creek."[43]
>
> TC Finding No. 5:
>
> "TC is of the opinion that based on the information provided during the Community Hearing Sessions, **the infilling of Little Fish Lake is expected to have an adverse impact on Aboriginal Groups' ability to exercise their potential or established Aboriginal rights** while navigating on Little Fish Lake and potentially in the Fish Creek watershed . . . The mitigation measures proposed by Taseko Mines Ltd. do not address the loss of Little Fish Lake and the surrounding waterways."[44]

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[41] Natural Resources Canada, *Natural Resources Canada's Comments on the New Prosperity Project Description submitted to the Canadian Environmental Assessment Agency*, (October 21, 2011), at p.2, available on CEAA Registry at: <http://www.ceaa-acee.gc.ca/050/documents/53304/53304E.pdf>. **(C-1413)** (emphasis added).

[42] Transport Canada Addendum to Written Submission, (August 16, 2013), available on CEAA Registry at: <http://www.ceaa-acee.gc.ca/050/documents/p63928/93323E.pdf>. **(C-1414)**.

[43] *Ibid*., at p. 2.

[44] *Ibid*., at p. 2 (emphasis added).

120. In the "Other comments" section contained in this submission by Transport Canada to the New Prosperity Review Panel, Transport Canada states:

> "TC notes that there will be long-term effects on navigational use of the TSF area. A large proportion of the area around Little Fish Lake will be affected. Users (Aboriginal Peoples) in the area around Little Fish Lake would be affected with respect to their ability to navigate when using the area for traditional purposes. This environmental effect (navigation) is captured under Section 5(c)(i) and (iii) in the Canadian Environmental Assessment Act, 2012."[45]

121. Transport Canada concludes its submission by comments that include the following: ". . . the impact of the TSF to navigation within the Project area is irreversible and appropriate mitigation measures for some effects may not exist".[46]

122. What is patently obvious in this Transport Canada submission to the Federal Review Panel for the New Prosperity Gold-Copper Mine Project is that Transport Canada was providing not just "comments" within its area of expertise but was in fact "taking a position on significant adverse environmental effects before a Federal Review Panel" – something that Mr. Connelly says that government departments do not do.

123. The Transport Canada statements quoted above certainly make clear Transport Canada found that a number of aspects of the New Prosperity project would have a significant adverse effect on navigation and in turn on Aboriginal Rights being exercised in respect of navigation on the affected lakes.

124. It is highly relevant, contrary to Mr. Connelly's opinion, that Transport Canada went so far in this letter to specifically state that the environmental effects on navigation "is captured" under section 5(c)(i) and (iii) in CEAA 2012.

125. In section 5(1) of CEAA 2012, the term "environmental effects" reads as follows:

> "For the purposes of this Act, the environmental effects that are to be taken into account in relation to an act or thing, a physical activity, a designated project, or a project are
>
> . . . (c) with respect to Aboriginal Peoples, an effect occurring in Canada of any change that may be caused to the environment on
>
> (i) health and socio-economic conditions
>
> (iii) the physical use of lands and resources for traditional purposes"

126. It is also highly relevant in assessing the reliability of Mr. Connelly's assertion – that federal officials do not take a position on the significance of adverse environmental effects before a

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[45] *Ibid.*, at pp. 2-3 (emphasis added).

[46] *Ibid.*, at p. 3 (emphasis added).

review panel – that the legal counsel for the New Prosperity Proponent, Taseko Mines, wrote directly to the Federal Review Panel on August 20, 2013 making the observation that Transport Canada's addendum comments "provides an assessment of the significance of the environmental effects of the proposed New Prosperity Project" but that these findings "do not support the determination of significant adverse effects on navigation" for reasons set out in the letter.[47]

127. The significance of this comment by the Proponent's legal counsel is that the Proponent recognized what Mr. Connelly has refused to acknowledge – that federal authorities have taken and continue to take a position on the significance of adverse environmental effects before Federal Review Panels.

COMMENTS ON THE VIEWS OF PETER GEDDES AND DR. BLOUIN AS TO THE RELEVANCE OF NO ADVERSE GOVERNMENT CRITIQUES OF WPQ AT THE JRP HEARING

128. Dr. Blouin states in paragraph 45 of his witness statement that my observation that no officials took the position before the JRP that the project would likely cause SAEE is, in his opinion, "unpersuasive".

129. He comments that his analysis "identifies several instances where the federal and provincial governments' submissions to the JRP identified issues regarding the project's environmental effects", which is correct. But he then uses that to argue that something he (wrongly) thinks I conclude is not accurate, when he states that it is not accurate to suggest that the federal and provincial governments were of the view that the project should be approved.[48] However, I made no such statement. My opinion was that in the absence of a finding in the WPQ JRP Report of SAEE other than CCV, or of findings of significant adverse effects that could not be mitigated within the NSEA, both the federal and provincial decisions makers had no legal alternative, if they were to act reasonably and not arbitrarily, but to approve the project. At that point they did not have a legal discretion to do otherwise.

130. Peter Geddes, in paragraph 11 of his witness report, acknowledges "the government submissions [to a panel review] can include comments on potential effects and the adequacy of assessment data. "Government reviewers typically identify issues or potential issues and

[47] Letter to the Panel from McMillan LLP, Counsel for Taseko Mines Limited concerning Transport Canada Addendum to Written Submissions, (August 20, 2013), available on CEAA Registry at: <http://www.ceaa-acee.gc.ca/050/documents/p63928/93514E.pdf>. **(C-1415)**.

[48] Blouin report, para 45.

suggest means of mitigation, or suggest there is inadequate information to determine that there might be an effect".[49]

131. However, Mr. Geddes does go on to opine that, in his experience in projects subject to a review panel, "government reviewers do not make findings on whether effects constitute an 'environmental effect' under the NSEA, nor do they provide a determination of whether the project application should be recommended for rejection or approval".[50] However, Mr. Geddes provides no specific references to the review panels that are within his experience, and indeed that experience would have had to have been exceedingly limited since in Nova Scotia during the period 2000-2016, aside from two JRPs, the Sydney Tar Ponds Coke Ovens Remediation Project and WPQ, the only projects that involved a Nova Scotia EA Board public hearing were Keltic and Highway 104.

132. But in fact Mr. Geddes, as panel advisor to Nova Scotia Environment & Labour (NSEL) during the Sydney Tar Ponds Coke Oven Remediation Project Joint Review Panel (chaired by Ms. Griffiths) and as a member of that JRP secretariat, would have known that at that JRP hearing (a) both his department and the Nova Scotia Department of Natural Resources (NSDNR) advised the JRP that the project would cause serious environmental impact effects and (b) that the JRP responded to such concerns in its recommendations.

133. NSDNR raised the concern that the project as proposed would cause loss of wetland and intertidal habitat and that it was necessary that the proponent either restore or compensate for this significant adverse impact.

> 4.7.3 Government and Public Concerns
>
> The NSDNR disagreed with STPA's conclusion about the loss of habitat found in the Tar Ponds. The department found fault in the EIS for failing to restore or compensate for the loss of wetland and inter-tidal habitat. It stated that it was not reasonable to assume that birds would move to other suitable habitat without having an impact on birds already resident in the new location. It advocated that, regardless of environmental quality, the Tar Ponds provide wildlife habitat and that provincial and federal policy stipulate that restoration or compensation is required in situations, such as with this Project, where loss of wetland habitat is unavoidable.[51]

134. Ms. Griffiths' JRP not only listened to that expert department concern, but acted on it:

> 4.7.4 Panel Conclusions and Recommendations
>
> The Panel shares the concern of others with the loss of wetland and inter-tidal habitat resulting from the destruction of the North and South Ponds following solidification stabilization and capping. Various species of birds use the water as a staging area.

[49] Geddes report, para 11.

[50] *Ibid.*, at para 11.

[51] Sydney Tar Ponds Panel Report **(C-534)**, at p. 62 (emphasis added).

> The area also provided habitat for some fish species and invertebrates. The Panel recognizes that environmental quality is expected to improve and the removal of the barrier to migration at Ferry Street will offset fish habitat loss. There is no corresponding offset for wildlife. The fate of the Tar Ponds is both a social and an environmental issue and the Panel's recommendation on this matter is found in Section 6.4.[52]
>
> **Recommendation # 41**
>
> Maximizing Aquatic Habitat Restoration as Part of Future Use Planning
>
> The Panel recommends that STPA, in consultation with NSEL, NSDNR, DFO and EC, develop a detailed habitat restoration plan for the Tar Ponds area, drawing the disciplines of remediation engineering and landscape architecture. The goal of the restoration plan is to increase the area of reclaimed estuarine habitat, while still enabling the effective encapsulation of contaminated sediments.[53]

135. Further, Mr. Geddes' department, the NSEL, told the JRP it was concerned that temporary storage of contaminated soil might have a negative effect on groundwater

> **5.3.2 Government and Public Concerns**
>
> Government Concerns
>
> NSEL expressed concern that the temporary storage of contaminated soil might have a negative impact on groundwater. Because the VJ site is located in an area that is not serviced by municipal water, protection of groundwater is particularly important. While previous industrial operations have already contaminated groundwater, NSEL stressed the need to make sure that the contamination does not become worse.[54]

136. Again, Ms. Griffiths' JRP not only heard, but acted on this expert government department advice:

> 7. *Groundwater and Surface Water Protection Design Requirements*:
>
> The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification /stabilization, NSEL and PWGSC require STPA to:
>
> - Incorporate hydrogeological modelling results into the final design of the groundwater and surface water control measures and the monitoring network;
> - Provide detailed calculations of the volume of groundwater that could flow through the Coke Ovens site following surface water diversion and the installation of the underground barriers and the surface cap;
> - Assess potential hydrostatic mounding that may be generated when

[52] *Ibid.,* at p. 63.

[53] *Ibid.*, at p. 115.

[54] *Ibid.*, at p. 86.

groundwater flow encounters cut-off walls and address the impact of mounding, if required; and

- Define and model the flow pattern of both ground water intrusion from the Coke Oven site and infiltration of sea water from the harbour to identify the amount of water that could collect under the monolith, including seasonal changes.

8. *Groundwater Monitoring Program*:

The Panel recommends that, prior to providing funds or issuing approvals to proceed with the Project, NSEL and PWGSC require STPA to develop a detailed groundwater monitoring program for the various Project areas, including the intermediate and deeper bedrock zones.[55]

137. Another apparent contradiction between Mr. Geddes' comment and actual practice by Nova Scotia environmental officials regarding a quarry EA application is evidenced in a comment made by NSDNR regarding the proposed Fundy Gypsum Miller's Creek Mine Extension Environmental Assessment, processed in 2008. The Wildlife Division of the Nova Scotia Department of Natural Resources prepared a memo entitled "Wildlife Division Comments re Fundy Gypsum Miller's Creek Mine Environmental Assessment", which provided various Wildlife Division comments and concerns about the project and then provided recommendations which specifically consider impacts.

Recommendations #1: "There is a high potential for long-term negative impacts on endangered plants and other species with a high level of conservation concern should the project proceed as outlined in the proponent's EAR document."

"We are concerned the Minister of Natural Resources will be unable to meet obligations under the Endangered Species Act if the project proceeds as outlined in the proponent's EAR document."

"We recommend that the project not be allowed to proceed as proposed until the details and requirements for protection of species at risk and their habitat can be formally agreed upon with the Government."

Recommendation #3: "Should the project proceed, the potential loss of one-third of the total provincial population of Yellow Lady Slipper (by number of individuals) is not acceptable given that it would likely result in the species being listed as Threatened under the Nova Scotia *Endangered Species Act*.

Recommendation #6: "Given the proximity of more than 40 endangered Ram's-Head Lady Slipper plants to Wetland #12 and the high potential for adverse effects resulting from changes to topography, vegetation and hydrology, we recommend Wetland #12 be fully captured within the Conservation Area . . ."

Recommendation #6: "The loss of wetlands as outlined in proponent's EAR should not be approved until a thorough analysis of avoidance options and associated

[55] *Ibid.*, at pp. 55-56 **(C-534)**.

> impacts to ecosystems services and project viability is undertaken and then reviewed and agreed upon by NSDEL and NSDNR."
>
> Recommendation #9: "We recommend that should the project proceed, future Industrial Approvals should be conditional upon a satisfactory and detailed review of the monitoring program for species at risk and those of conservation concern by government regulators in NSEL and NSDNR."[56]

138. In the email attaching the memo, a Wildlife Division official stated: "Essentially, there are some significant concerns about the layout of the mine as it could impact several wetlands and species at risk . . . "[57]

139. It can be seen by these Nova Scotia government review comments that, in fact, government experts provide their opinions as to how projects under EA review will not only constitute "an environmental effect" but clearly they do not hesitate to provide expert findings that some adverse effects will be occasioned unless certain responses are made or measures taken to deal with these.

140. Mr. Geddes, like the other witnesses offered by Canada to address this issue, has not had appropriate regard in his witness statement to his own experience regarding the actual practice of their agencies and departments in which experts do, in fact, make comments about whether there are likely adverse effects or significant adverse environmental effects. That is the essence of what officials employed in EA review positions are charged to carry out.

141. Pausing here it can be seen that none of Canada's four expert witnesses deny my observation that there is nothing in the record before the WPQ JRP from government officials that indicates these officials were of the view that there would be likely significant adverse environmental effects or "adverse environmental effects" in the Nova Scotia context. There is no credibility to be attached to the assertions by Ms. Griffiths, Mr. Connelly, and Mr. Geddes that it is contrary to established practice for expert impact evaluations to be provided to review panels.

THE WPQ PROJECT JRP SPECIFICALLY REQUESTED EXPERT OPINIONS FROM GOVERNMENT OFFICIALS WITH RESPECT TO THE PROJECT'S POTENTIAL ENVIRONMENTAL EFFECTS

142. Initially, in a series of letters, the WPQ JRP requested that ten provincial and federal government departments "participate" at the panel hearings and provide their views as experts on the environmental effects of the WPQ project. Letters were sent to expert

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[56] This memo is attached to an email dated March 6, 2008 from Scott Swinden to Thomas Lamb; these documents were obtained from the NSE Response to an Access to Information Request. **(C-1416)** (emphasis added).

[57] *Ibid.*

departments including Natural Resources Canada;[58] Fisheries and Oceans Canada;[59] Environment Canada;[60] Health Canada;[61] Transport Canada;[62] Nova Scotia Department of Natural Resources;[63] and Nova Scotia Department of Transportation and Public Works.[64]

143. The invitation letters stated that the JRP "believes that participation by federal and provincial departments and agencies and environmental assessment is required to ensure that we collect all necessary information prior to submitting our report to both levels of government".

144. Each letter then went on to specifically request presentations from each expert department on its views regarding the project's "environmental effects":

> "Accordingly, we request that representatives from [your department] appear . . . to give a presentation and be prepared to answer questions from the panel and the hearing participants. The panel would like the department to present its views on environmental effects associated with the project including comments on the adequacy of the proponent's responses to your comments on the EIS".

145. Following receipt of the request to participate, all invited departments either made oral, or both written and oral submissions. Many of the written submissions explicitly identified and addressed potential environmental effects of the WPQ project.

146. For example, in its written submission (also referred to as the "presentations summary"), Health Canada stated:

> "As an expert federal authority, Health Canada did not make any decisions in relation to the project, however, Health Canada provided assistance in the environmental assessment by way of expert knowledge and information on human health effects that could be generated by the projects. The goal of Health Canada's review was to

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[58] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Mark Pearson – Natural Resources Canada,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1772.pdf. (**C-1417)**.

[59] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Faith Scattolon – Fisheries and Oceans Canada,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1777.pdf. (**C-1418)**.

[60] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Jim Abraham – Environment Canada,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1776.pdf. **(C-1419)**.

[61] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Simon d'Entremont – Health Canada,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1775.pdf. (**C-1420)**.

[62] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Gerry Berigan – Transport Canada,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1771.pdf. **(C-1421)**.

[63] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Hugh Gillis – Nova Scotia Department of Natural Resources,* May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1773.pdf. (**C-1422)**.

[64] Whites Point Quarry and Marine Terminal Project Joint Review Panel, *Letter from Robert Fournier to Elizabeth Pugh – Nova Scotia Department of Transportation and Public Works*, May 11, 2007, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1782.pdf. **(C-1423)**.

> identify any potential human health effects and to ensure adequate mitigating measures were in place."[65]

147. Health Canada identified potential health effects of the project within its area of expertise regarding the following: Air quality; Noise; Drinking water; and Impacts on country foods. For each of these, Health Canada's comment was to the effect that, based on the information provided in respect of the particular project component, the particular component would be protective of human health:

> "Health Canada finds that this project component, as described in the environmental impact statement, is protective of human health provided all applicable mitigative measures as presented in the environmental impact statement and subsequent proponent responses are undertaken."[66]

148. During the hearings, the JRP directed questions to expert agencies. Comments were elicited from a number of agencies on various potential effects.

- To DFO, whether the project would have behavioural effects on specific species;

  JRP Panel member Ms. JILL GRANT: So in this case, you've indicated that there is some possibility of physical harm from ship strikes, and some possibility of behavioural effects. Can you give us an idea of what kind of behavioural effects are possible in the species at risk, especially the right whale? [67]
- To DFO, as to the effects of ammonia residue from the site on the surrounding environment;[68]

  CHAIRPERSON FOURNIER: And if there was . . . And we have heard earlier in our presentations, presentations of others, that if there was an anticipated storm or a big event was coming and there was some fear that the ponds couldn't hold the amount of water that was anticipated to be coming, there would be a sudden flash release of it to bring the levels down. Otherwise, the water would overflow or the berms might break. Okay?

  Now, the impact on this . . . This is hypothetical, of course, because we don't know the exact number of the percentage, but the question then becomes, from a habitat standpoint, from an organism standpoint, the sudden release or even the controlled release of large amounts of toxic material or even if it breaks down and converts to nitrate or nitrite, it's still going to be nitrogenous and it's still going to end up in the

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[65] Health Canada, *Presentation Summary: Health Canada's Submission for the Whites Point Quarry and Marine Terminal Project,* June 13, 2007 at p.1, online at: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1783-035.pdf. (emphasis added) **(C-1424)**.

[66] *Ibid.*

[67] Question by JRP regarding DFO submission at JRP hearing, vol.4, p. 786:16-22. **(C-157)** [Jill Grant, JRP Member].

[68] DFO submission at JRP hearing, vol.4, p. 812:9 – 816:7. (**C-157)** [Robert Fournier, JRP Chair].

environment.

I'd like to hear what you have to say about that.[69]

- To DFO, as to the effects and consequences of the WPQ Project on invasive species.[70]

  Ms. JILL GRANT: Just a couple of other questions on the invasive species question. Do you have any special concerns around the area where the ship is going, the other end?

  Some concerns have been flagged in a study done for the Proponent by Mallet about the high risk of some of the species in that area, so I just wonder whether that creates a special concern or not.[71]

149. JRP member Gunter Muecke to DFO: We understand that there is quite an important herring fishery in this part of the coast, and having a facility, the loading facility which is lit up and with lights directed downward in order to avoid boat collisions and interference with migratory birds, could you give me a sense of how you feel about possible interference of the facility with the herring fishery?[72]

150. Jill Grant to DFO: And can you clarify for me whether the meaning of "likely effects" is the same under SARA as it is under the CEAA legislation? It seems like it's a little bit different. Can you clarify what the meaning of "likely effects" would be?[73]

151. Jill Grant to Transport Canada: Thank you. The study provided by the Proponent on the waters where the ballast water will be taken on in the Hudson-Raritan Bay Estuary area indicate that there's very high risk there for a number of organisms of concern, including parasitic lobster disease, mollusk disease, Asian crab, brown tide.

> So I'm wondering . . . And perhaps hull fowling agents. So I'm wondering what kinds of concerns Transport Canada has, and what kind of monitoring you'd be doing around whether these invasive organisms are coming in, in the ballast water, even after exchange? [74]

152. Jill Grant to Health Canada: Thank you. And on the socio-economic, you went over quite quickly the socio-economic, but I'm wondering whether as an agency you track the effects

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[69] Question by JRP regarding DFO submission at JRP hearing, vol.4, p. 814:2-23. **(C-157)** [Robert Fournier, JRP Chair].

[70] DFO submission at JRP hearing, vol.4, p. 827:8-15. **(C-157)** [Jill Grant, JRP Member].

[71] Question by JRP regarding DFO submission at JRP hearing, vol.4, p. 827:8-15. **(C-157)** [Jill Grant, JRP Member] (emphasis added).

[72] *Ibid.,* at p. 834:22 – 835:83.

[73] *Ibid.,* at p. 784:13-17 (emphasis added).

[74] *Ibid.,* at p 738:19 – 739:5 (emphasis added).

of these kinds of projects on communities, on community health, sense of wellbeing and so on; whether there's anything that you can offer us there in terms of the potential effects.[75]

153. The WPQ JRP also requested government officials who provided testimony at the JRP hearing to provide answers to questions that panel thought needed further elucidation and these requests and responses were labeled "Undertakings". The following is a list of direct quotes taken from the transcripts related to undertakings involving government officials who are being asked by the panel to provide further expert opinions. All questions or statements from the panel in respect of such undertakings are asked by one or more of the WPQ panel members.

154. **Undertaking #29:** *Robert Fournier*: "Number 29, **Fisheries and Oceans Canada, to provide**, following collaboration with Environment Canada, **an assessment of the ecological risks associated with the ammonia residuals resulting from blasting and episodic and control releases from the Project's settling ponds**."[76]

Response – DFO: The following is an excerpt from the DFO response:

> Although no water quality guideline exists in Canada for NH3 in marine water, it is documented to cause acute lethality to fish at levels as low as 0.1-0.2 mg/L. Also, ammonia dissolved in water is listed as a toxic substance on Schedule 1 of the Canadian Environmental Protection Act. . . .
>
> In its review of the environmental assessment documentation for the Whites Point Quarry and Marine Terminal project, Environment Canada highlighted the importance of reducing blasting residues in achieving compliance and reducing the potential for adverse environmental effects. . . .
>
> Without further information, it is difficult to predict the ecological risk associated with ammonia residues from blasting. However, if the proponent is able to reduce the levels of blast residue to their lowest practical levels, from DFO's perspective, any residual material would be unlikely to have any ecological impact, given the mitigation measures proposed and the high rates of flushing in the Bay of Fundy.[77]

155. **Undertaking #31 re Species at Risk:** *Jill Grant*: "We don't have time to get into all of the, those species that are listed under CEAA. We had a fair bit of time to talk about whales, but . . . The right whale, but I wonder if you could endeavour to come back with *[sic]* us with a summary table of the species listed under CEAA that apply in the marine environment in this Project, and **identify the potential effects on each, and whether the effects are likely,**

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[75] JRP hearing transcript, Volume 3, p. 489: 8-14 **(C-156)** (emphasis added).

[76] JRP hearing transcript, Volume 5, p.903: 18-22, (**C-158)** (emphasis added).

[77] Excerpt from DFO response to Undertaking 29 **(C-437)** (emphasis added).

as defined under CEAA. . . Whether the likely effects are adverse, and whether they're mitigable, and whether a CEAA permit would be required."[78]

Robert Fournier: "Number 31, also to Fisheries and Oceans Canada, to provide a listing of the SARA protected species, **the potential effects on each, whether or not effects are likely, adverse, mitigable** and whether or not a SARA permit will be required."[79]

156. In its Undertaking 31 response, DFO summarized the potential project effects and mitigation measures for marine species at risk and considered whether *SARA* permits would be issued in the future for these species.[80] In no case did the DFO state that WPQ was likely to cause adverse effects to the endangered or threatened marine species. (The DFO response to Undertaking #31 is elaborated in Part 2 of this report).

CONCLUSIONS ON THIS UNRELIABILITY ISSUE

157. It is clear that Ms. Griffiths and Mr. Connelly, in providing opinions in their witness statement that government officials do not and must not comment at panel reviews on a project's potential for adverse environmental effects and that such advice is not sought or requested by JRP's, did not have regard to their actual practice as panel chairs to the contrary, but also did not refer to the fact that the WPQ JRP took the same approach as they did in their panel reviews.

158. As revealed in the above comments and quotations from the transcripts of the JRP hearing, it is clear that the Whites Point JRP was also keenly interested in hearing from government departments as to the project's "effects" on various components of the environment as well as whether the likely effects "are adverse" and or whether "they are mitigable".

159. That Ms. Griffiths and Mr. Connelly did not discuss in their witness statements that the WPQ JRP sought out opinions of expert government departments as to potential impacts and their significance is another important indicia of the unreliability of their opinions on this issue.

160. Also, as we have shown above by way of specific examples, Mr. Geddes' assertions on these matters are not in accord with Nova Scotia EA review panel practice.

161. It is clear the opinions of these witnesses offered to this Tribunal on this issue are contrary to both their own actual practice, knowledge and "experience". Most notably, nowhere do

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[78] JRP hearing transcript, Volume 4, p .860:15-25 **(C-157)**.

[79] JRP hearing transcript, Volume 5, p .904:1-5 **(C-158)** (emphasis added).

[80] **(C-417)**. Response to Undertaking #31 – Marine and Diadromous Fish – Species Listed on Schedule 1 – official list of wildlife specifies at risk in Canada (To provide a listing of the SARA protected species, the potential effects on each, whether or not effects are likely, adverse, mitigable, and whether or not a SARA permit will be required).

they dispute that no government official provided an opinion that the WPQ would likely have significant adverse environmental effects.

PART 2: REPLY TO MS. GRIFFITHS AND DR. BLOUIN EXPERT OPINIONS THAT PROGNOSTICATE APPROVABILITY CHALLENGES FOR WPQ IF CONSIDERED BY A FURTHER REVIEW PANEL

PREFACE

This Part of my Expert Report focuses on the opinions of Canada's expert witnesses Ms. Griffiths and Dr. Blouin as to why uncertainties and other issues arising in the JRP report could, in their view, affect the approvability of the WPQ – assuming it was subject to a further panel review. Based on my review, I have identified important problems with their approach.

SUMMARY: IMPORTANT PROBLEMS IN THEIR APPROACH PROGNOSTICATIONS

A. Looking at Approvability Through a Review Panel Lens is the Wrong Focus

These witnesses assert that their prognostications are based on their experience as former panel chairs. However, this approach would require this Tribunal to look at the issue of approvability using the wrong type of glasses. Other than the WPQ, there has never been a review panel that has ever been convened in Nova Scotia to consider the EA acceptability of a quarry. The correct lens is to consider the WPQ's approvability under the process applied by Nova Scotia to every other quarry in response to an application for EA approval. These witnesses have refused to do that.

B. These Witnesses Have Not Applied Standard Review Panel Approvability Approaches

Even assuming a review panel approach to approvability could be considered appropriate, these witnesses have not considered and applied the usual panel review practice. Their prognostications are highly problematic since they only consider a worst-case outcome – that EA approval would be affected due to uncertainties, missing information and other issues they reference. They fail to consider the much more likely outcome that the project would receive EA approval if standard EA review and approval practices were used, including the mitigation measures that are normally applied in similar approved projects.

C. There are Significant Reliability and Relevance Issues in their Critiques connected to Right Whales and Lobsters

The major basis on which these witnesses doubt approvability of WPQ is the prognostication of project effects on right whales and lobster. However, there are important concerns that affect both (i) the reliability of their prognostications that SAEE would likely be found in respect of the right whale or lobster habitat; and (ii) that these issues would affect EA approvability.

D. Concerns as to Dr. Blouin's prognostications as to the approvability of WPQ under the NSEA

The opinions offered by Dr. Blouin to doubt the approvability of WPQ under the NSEA are problematic. He does not consider that the matters he relies on are not unique in quarry EAs and also that these have never affected the approval of a quarry EA by Nova Scotia.

DETAILED ANALYSIS

ISSUES REGARDING THEIR OPINIONS THAT THE WPQ WAS LIKELY TO CAUSE SAEE ON THE NORTH ATLANTIC RIGHT WHALE AND THE AMERICAN LOBSTER

162. Ms. Griffiths' report provides her opinions as to the conclusions that the WPQ JRP could have reasonably reached with regard to its significance determination under CEAA had it not committed the NAFTA breach, with a particular focus on environmental factors. More specifically, she asserts the WPQ JRP could have reasonably concluded that the project was likely to cause SAEE on the right whale and American lobster and lobster habitat "taking into account proposed mitigation".[81]

163. Dr. Blouin's analysis of environmental effects in the Nova Scotia EA regime are contained in Part IVB of his Witness Statement.[82] He first considers "bio-physical effects" and considers that the most significant concern of this nature relates to the impact of the project on endangered marine mammals, such as right whales and on lobsters.[83] He also considers the issue of ballast water and how that could be of significance to the spread of invasive species which, in turn, would affect the fishery industry.[84]

164. However, there are significant concerns that affect both (i) the reliability of the prognostications of these witnesses that SAEE would likely be found in respect of the right whale or lobsters; and (ii) that these issues would affect EA approvability.

165. Their opinions as to likely SAEE for the right whale conflicts with DFO evidence; and they make no reference to considering the most relevant DFO evidence provided to the JRP in asserting their opinion.

166. Ms. Griffith has stated that EA evaluation must be based on an "evidence based approach", but neither she nor Dr. Blouin make any reference to the clear evidence that Canada and Nova Scotia have never denied EA approval to similar projects where there were right whales or a lobster fishery in nearby waters.

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[81] Griffiths Report, para. 64.

[82] Blouin Report, paras. 49-103.

[83] *Ibid.*, paras. 52-64.

[84] *Ibid.*, paras. 65-66.

167. She, like Dr. Blouin, has ignored the expert evidence from DFO to the JRP, namely:

(a) that right whales are not commonly found in the immediate vicinity of the quarry:

> "Right whales are not commonly found in the immediate vicinity of the quarry. There are no recorded sightings in the 3 minute survey grid cells immediately adjacent to the site" [a single three-minute grid cell is approximately 22 km^2].

(b) that with respect to impacts from vessel strikes, DFO's opinion was:

> ". . . given the location of the quarry (outside the main aggregation area for right whales), the relatively small amount of vessel traffic expected, and taking into account the proposed mitigation measures, the potential for lethal vessel strikes associated with the quarry is considered low".

(c) that with respect to potential increases in the ambient noises associated with shipping:

> "the increase in shipping noise in right whale habitats associated with this project is expected to be minimal due to the relatively small increase in traffic and the location of the quarry".

(d) That with respect to considerations regarding quarry blasting:

> "The proposed mitigation (monitoring a safety zone for marine mammals prior to blasting) is expected to substantially reduce the risk of a blast occurring while a whale is within a 500-meter radius during good weather conditions".

(e) Further:

> "Given the location of the quarry and the frequency of blasting, physical harm to right whales is considered very unlikely if mitigation is applied rigorously."[85]

168. With respect to the American lobster and lobster habitat, their prognostication concerning SAEE being likely due to invasive species associated with aggregate shipping omits consideration of important facts: Canada has specifically affirmed the adequacy of the Ballast Water Regulations regarding potential invasive species effects, by

(a) rejecting the WPQ JRP's own recommendation that these regulations be made more stringent; and

(b) rejecting the relevance of this issue to prevent the approval by Canada of BPQ and other quarry projects where American lobster were present.

169. They have also refused to look up the coast of Nova Scotia to what actually occurred in 2016 in a CEAA/Nova Scotia EA approval process that resulted in the approval of the much larger Black Point Quarry & Marine Terminal (BPQ) project. As noted, it will involve twice as much shipping of aggregate though waters hosting invasive species, and is located in an area that

[85] DFO Response to WPQ JRP Undertaking 31 **(C-417)**.

had the very same primary sensitivities on which they focus their concerns – right whales and lobsters.

170. Indeed, there could not be a more similar project in the same province with the same issues that was processed under the same legislation as the WPQ project – yet they have refused to use this project in addressing the approvability of the WPQ.

171. Neither witness has attempted to explain why their concerns about WPQ approvability can be considered reasonable having regard to the fact that in 2016 both Canada and Nova Scotia approved the EA for the BPQ, despite evidence in the EA process to the effect that:

- right whales and a lobster fishery were in the area;
- that BPQ will generate 100% more aggregate shipping per year than WPQ.

172. These witnesses are asking this Tribunal to look at the issue of approvability using the wrong type of glasses. Since there has never been a review panel for any other Nova Scotia quarry aside from WPQ, and since all of these have been processed by EA personnel of the Nova Scotia and Federal governments, the correct lens to use in examining "approvability" is what should occur in a review of that nature.

173. Of course they have not chosen to use that lens, because they know that all quarry and marine terminal proposals in Nova Scotia have received EA approval.

174. Ms. Griffiths also misinterprets a DFO concept, no "Allowable Harm", "to mean that the loss of a single animal due to project activities over the fifty years of operation would be unacceptable".[86] She asserts this view by referencing only some, but not all, of DFO testimony to the JRP on this issue.

175. In paragraph 77 of her Report, Ms. Griffiths inserts her own words into the evidence of DFO:

> "I note that DFO categorically stated in its response to questions by the panel at the hearing that, with respect to the right whale, there is no "Allowable Harm" – which could be reasonably interpreted to mean that the loss of a single animal due to project activities over the fifty years of operation would be unacceptable."[87]

176. However, it is clear that her interpretation, "that the loss of a single animal due to project activities would be unacceptable", is solely her own and is wrong.

177. Moreover, she later attempts to obfuscate the distinction between the words of DFO and her own interpretation. She superimposes her own incorrect interpretation onto the evidence of

[86] *Ibid.*, para. 77.

[87] Griffiths Report, at para. 77.

DFO, alleging that her (mistaken) interpretation is, in fact, the clear words of DFO and not merely her own:

> "However, in the case of the Whites Point project the uncertainty regarding blasting effects would be particularly concerning given the threshold that DFO felt the project should meet with respect to right whales – namely, that not a single animal be lost."[88]

178. Ms. Griffiths places significant weight on her own interpretation of DFO's statement, and believes that a SAEE would have been inevitable based on this interpretation. However, she has arrived at this mistaken view by the fact that, in footnote 89 to her Report, she only quotes the first portion of the statement from DFO at the JRP hearing, making it seem as if DFO has unequivocally stated that the project cannot proceed if it were to result in the death of even one right whale:

> "We determine that, in part, through something that we call an Allowable Harm Assessment, which is a scientific review process done through peer review that looks at the productivity of the species and the amount of human-induced mortality and harm that it can tolerate. For both inner Bay of Fundy salmon and for right whale, that process has been done. And in both cases, it's determined that there's no allowable mortality for either of those species."

179. Importantly, she omits the rest of that quotation, which indicates that DFO is not addressing the issue of whether the WPQ project can proceed, but rather the issue of when and if DFO would issue a permit that could allow harm to occur (an Incidental Harm Permit):

> "So that's obviously an important consideration, and it means that there would be very limited circumstances in which we would issue permits for these two species, so that should be taken into account."[89]

180. She misinterpreted or failed to appreciate the purpose of an Allowable Harm assessment, which is to assist DFO in determining whether it can issue a SARA Incidental Harm Permit that would allow incidental harm to a particular species. In the case of right whales, DFO determined that there were "limited circumstances" in which it would issue such a permit. DFO was indicating that even without such a permit, the project can proceed, but in that case the onus is on the proponent to design and implement "effective mitigation measures":

> "SARA Permit to be Issued: Not expected. DFO Science has determined that there is no allowable harm for this species, therefore it is not anticipated that permits will be issued to cause incidental harm to North Atlantic right whales. The proponent must prevent causing harm to this species through project design and effective mitigation measures."[90]

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[88] *Ibid.,* at para. 91.

[89] WPQ Hearing Transcript, Volume 4, p.812:5-8 **(R-463)**.

[90] DFO Response to WPQ JRP Undertaking 31 **(C-417)**.

181. Clearly, DFO did not tell the JRP that the project should not go ahead unless the proponent could guarantee no harm to right whales. Rather, DFO stated that the proponent cannot apply for a permit to cause incidental harm to the species. Ms. Griffiths chose to ignore this part of DFO's evidence and also omitted to consider what DFO made clear in its Undertaking 31 response about the right whale. She neglects to mention that DFO has clearly stated it is up to the proponent to ensure no harm will come to the right whale population.

182. Indeed, that her interpretation of "allowable harm" is wrong is clearly demonstrated by the fact that in 2016 the Federal Environment Minister approved the BPQ with a condition that specifically accepts that collisions of shipping vessels with whales and other specifies at risk would continue to occur:

> "3.6 For Designated Project-related vessels transiting between shipping lanes and the marine terminal, the Proponent shall implement measures to mitigate the risk of collisions with whales, Harbour Porpoise (Phocoena phocoena) and sea turtles taking into account the Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas. The measures shall include:
>
> 3.6.1. conducting and recording observations for whales, Harbour Porpoise (Phocoena phocoena) and sea turtles;"[91]

183. Mostly importantly, DFO, as the federal agency responsible for marine species under the federal *Species at Risk Act,* did not find that WPQ was likely to cause any adverse effects to listed marine species which could not be mitigated.

184. In particular, in DFO's response to Undertaking 31 to the JRP, DFO summarized potential project effects and mitigation measures for marine species at risk and considered whether *SARA* permits would be issued in the future for these species.[92] In no case did DFO state that WPQ was likely to cause adverse effects to the endangered or threatened marine species.

185. Ms. Griffiths' comments on this issue suggest she did not consider or understand DFO's response to JRP Undertaking 31 in its entirety, which was provided to the panel on June 29, 2007 (after comments were made by DFO to the JRP on June 21, 2007, on which Ms. Griffiths relies in her report).[93] Undertaking 31 explicitly addresses the potential effects of vessel strikes, shipping noise and blasting on the right whale. With respect to vessel strikes, DFO concluded that, "the potential for lethal vessel strikes associated with the quarry is

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[91] BPQ, Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012, Black Point Quarry Project, April 26, 2014 **(Found at Appendix F of this Report) (C-1333)**.

[92] Response to Undertaking #31 – Marine and Diadromous Fish – Species Listed on Schedule 1 – official list of wildlife specifies at risk in Canada (To provide a listing of the SARA protected species, the potential effects on each, whether or not effects are likely, adverse, mitigable, and whether or not a SARA permit will be required) **(C-417)**.

[93] WPQ Hearing Transcript, Volume 4, June 21, 2007, pp. 812:5-8 **(R-463)**.

considered low."[94] A reading of DFO's analysis on the effect of vessel strikes on right whales shows that DFO was fully aware of the susceptibility of the whales to vessel strikes and the possibility of ship strikes. Yet, notwithstanding this, DFO proceeded to conclude that based on the location of the quarry and the relatively small amount of vessel traffic expected as well as the proposed mitigation measures, the potential for lethal vessel strikes associated with the quarry was considered low. DFO did not make any reference to or finding of SAEE in relation to potential vessel strikes.

186. **Table 1** below contains verbatim excerpts of DFO's response in Undertaking 31. A careful review of DFO's response indicates that DFO did not find in the circumstances that there would be adverse or significant adverse impacts on species at risk from the WPQ project, including the right whale.

Table 1: **Species listed as "Endangered" in WPQ And Excerpts of Fisheries and Oceans Canada's Findings on the Project's Impact on These Species from Undertaking 31**	
Species at Risk	Fisheries and Oceans Canada Findings [With Emphasis Added]
North Atlantic right whale (Eubalaena glacialis) ***SARA* Status: Endangered (2002)**	Vessel Strikes: Given the location of the quarry (outside the main aggregation area for right whales), the relatively small amount of vessel traffic expected and taking into account the proposed mitigation measures, **the potential for lethal vessel strikes associated with the quarry is considered low**. Shipping noise: The increase in shipping noise in right whale habitat associated with this project is expected to be minimal due to the relatively small increase in traffic and the location of the quarry. Nonetheless, **monitoring of shipping noise is recommended if the project proceeds**. Blasting: Given the location of the quarry and the frequency of blasting, physical harm to right whales is considered **very unlikely if mitigation is applied rigorously. . . .** The ability of the proponent to monitor a safety zone larger than 500m is uncertain, and therefore behavioural effects to right whales are considered possible. However, **these effects would not necessarily be adverse**. **Harmful effects are considered unlikely**, but the confidence associated with this conclusion is low. Monitoring a representative blast prior to the arrival of right whales would help improve the confidence associated with these effects predictions.
Inner Bay of Fundy Salmon ***SARA* Status: Endangered (2002)**	Given the release of contaminants and sediments in the amounts specified by the proponent in the EIS**, adverse effects to the inner Bay of Fundy salmon are unlikely**. If the project proceeds, monitoring of contaminants and sediments should be implemented to ensure that releases do not exceed the amount which may have potential effects.
Atlantic whitefish *(Coregonus hunstamani)*	If present in the area, Atlantic whitefish could be affected by blasting, sedimentation or contamination. If the proponent follows DFO's recommendations regarding setbacks and procedures for blasting and restricts releases of sediment and contaminants to the levels outlined in

[94] DFO, Undertaking 31, at p. 8 **(C-417)**.

Table 1: **Species listed as "Endangered" in WPQ And Excerpts of Fisheries and Oceans Canada's Findings on the Project's Impact on These Species from Undertaking 31**	
Species at Risk	Fisheries and Oceans Canada Findings [With Emphasis Added]
***SARA* Status: Endangered, 2002**	the EIS, the above noted effects are **expected to be effectively mitigated**. Given that it is unlikely whitefish will occur in the vicinity of the quarry during its lifespan, and taking into account the proposed mitigation, **adverse effects to this species are not expected**.
Porbeagle Shark (*Lamna nasus*) **COSEWIC Status: Endangered (2004)**	The porbeagle shark could be affected by blasting, sedimentation, or contamination associated with this project. If the proponent follows DFO's recommendations regarding setbacks and procedures for blasting and restricts releases of sediment and contaminants to the levels outlined in the EIS, **the above noted effects are expected to be effectively mitigated**. . . . Given the above, and that the number of individuals found adjacent to the quarry would likely be very small compared to the total population size**, adverse effects to this species are not expected**.
White Shark (*Carcharodon carcharias*) Atlantic Pop. **COSEWIC Status: Endangered (2006)** ***SARA* Status: Under consideration for addition to Schedule 1**	If the proponent follows DFO's recommendations regarding setbacks and procedures for blasting, restricts releases of sediment and contaminants to the levels outlined in the EIS, the **above noted effects are expected to be effectively mitigated**. Furthermore, the **likelihood of a white shark occurring in the immediate area is low**. . . . Given the above, adverse effects to this species are not expected.
Blue Whale (*Balaenoptera musculus*) Atlantic Pop. ***SARA* Status: Endangered (2002)**	Vessel strikes: The assessment of the effectiveness of mitigation measures discussed above in relation to right whales is also generally applicable to blue whales. The main difference in terms of the level of risk posed to this species is that it occurs much less frequently in the Bay of Fundy. Taking this into account, along with the amount of vessel traffic expected at the marine terminal and the proposed mitigation, **the likelihood of a vessel strike due to a blue whale as a result of this project is low**. Blasting: Given the infrequent occurrence of this species in the Bay of Fundy, and taking into account the proposed mitigation measures and the frequency of blast events, **physical injury to blue whales from blasting is considered unlikely**. The infrequent occurrence of the species in the project area also makes **behavioural effects on blue whales unlikely**. As with other species mentioned in this section, initial blast monitoring would help improve the confidence in effects predictions related to blasting.
Leatherback Turtle (*Dermochelys coriacea*) **SARA Status: Endangered (2002)**	Vessel strikes are not an identified to leatherback turtles. Little is known about the auditory capacity of this species, and therefore the effect of noise on leatherbacks is unknown. DFO has recommended that guidelines for marine mammals and blasting also be applied in the case of leatherback turtles. However, monitoring a safety zone visually or acoustically for sea turtles is much more difficult for marine mammals, and therefore the effectiveness of this mitigation is likely to be limited. **Nonetheless, given the infrequent occurrence of this species in the**

Table 1: **Species listed as "Endangered" in WPQ And Excerpts of Fisheries and Oceans Canada's Findings on the Project's Impact on These Species from Undertaking 31**	
Species at Risk	Fisheries and Oceans Canada Findings [With Emphasis Added]
	project area, the likelihood of harmful effects to this species from blasting is thought to be low. SARA Permit unlikely to be issued – "There is scope for allowable harm to this species and therefore a permit could be issued to cause incidental harm to leatherback turtles under Section 73 of SARA if other relevant preconditions outlined in the Act were met. However, Sara permits are typically only issued **where there is a reasonable likelihood of interaction with a listed species. In this case, the likelihood of a harmful effect is considered low**."
Harbour Porpoise (*Phocoena phocoena*) **COSEWIC Status: Special Concern (2006)** **SARA Status: Under consideration for addition to Schedule 1**	Blasting and shipping associated with the quarry … will occur relatively infrequently and are therefore **not expected to exclude harbour porpoises from habitat**. . . . The proposed mitigation measures, if implemented rigorously**, should substantially reduce the risk of blasting occurring while harbour porpoises are within 500 m of a blast site**. . . . Behavioural effects would not necessarily be adverse, and given the abundance of harbour porpoises in the Bay of Fundy – Gulf of Maine, **it is very unlikely that they would result in population-level effects**.

COMPARATOR PROJECTS ALSO HAD RIGHT WHALES IN THE VICINITY, BUT THESE PROJECTS WERE APPROVED BY CANADA AND NOVA SCOTIA

187. Ms. Griffiths also omits to make reference to other comparator projects which also had right whales and lobster in the vicinity of those project but which were nonetheless approved by Canada, subject to the usual terms and conditions.

188. It is apparent that many aspects of the potential effects of the WPQ project related to shipping and species at risk were present in other approved projects. For example, WPQ bears several striking similarities to the conditions that existed in the Black Point Quarry Project.

Black Point Quarry and Marine Terminal Project

189. Both projects were to be located in coastal areas. The location for BPQ is in the District of Guysborough, which describes itself as being an area of "unspoiled natural beauty, rugged coast lines, fabulous sand beaches, pristine inland waterways".[95]

[95] "District of Guysborough: Tourism", online: http://www.municipality.guysborough.ns.ca/business/resource-sectors/tourism, accessed 5 March 2017 **(C-1337)**.

190. Both projects have private sector proponents who sought to develop a large quarry in Nova Scotia for the purpose of exporting rock to markets along the eastern and Gulf coast of the US to supply construction aggregate used in concrete and asphalt.[96] Like WPQ, BPQ was also a 50-year quarry.[97]

191. Both projects included plans to construct a marine terminal to transport aggregates to the US by bulk vessel,[98] and both projects were located in the vicinity of fishing areas. The BPQ project area has a commercial fishing industry that provides approximately 400 jobs in the form of small, independently owned businesses.[99] The project area is located in Lobster Fishing Area 31A and herring and Mackerel Fishing Areas 19.[100] Similarly, commercial fishing activities also took place in the vicinity of WPQ, which was located by the Bay of Fundy.[101] BPQ also shared similarities with WPQ with respect to the presence of marine species at risk, particularly, the presence of the North Atlantic Right Whale, Harbour Porpoise, Fin Whale and Leatherback Turtle.[102]

192. However, key differences can be observed in terms of the size and intensity of operation of the two projects. The BPQ is physically larger and to be a much more intensive operation than WPQ, thereby having the clear potential to cause similar, but even more intensive and broader scale environmental effects than WPQ. The BPQ Project property has a total surface area of 354.5 hectares of which the finished quarry will occupy approximately 180 hectares while the processing plant, administration and stockpile areas together will occupy approximately 28 hectares.[103] In contrast, the WPQ project was much smaller, occupying 152 hectares, of which land based infrastructure and activities will include the quarrying of

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[96] Vulcan Materials Company, "Black Point Quarry Environmental Impact Statement" (February 2015), online: http://ceaa.gc.ca/050/document-eng.cfm?document=101243, [BPQ EIS], Part 1, Section 1.2 at p. 7 **(C-1340)**.

[97] BPQ EIS, *Ibid.*, at p. 6 **(C-1340)**.

[98] Morien Resources Corporation, "Black Point Quarry Project Description" (28 February 2014), online: http://www.ceaa-acee.gc.ca/050/documents/p80064/98478E.pdf [BPQ Project Description] **(C-1332)**.

[99] BPQ EIS, Part 2, Section 6.10.3 at p. 180 **(C-1340)**.

[100] *Ibid.,* at pp. 180 & 188.

[101] WPQ EIS, Chapter 9.3, online: https://www.novascotia.ca/nse/ea/whitespointquarry.eis.asp at p. 85 [WPQ EIS], **(Exhibit C-001)**.

[102] WPQ JRP Report at p. 129, **(Exhibit C-34)**; Canadian Environmental Assessment Agency, Black Point Quarry – Environmental Assessment Report (April 2016), online: http://www.ceaa.gc.ca/050/documents/p80064/114132E.pdf [BPQ EAR] at p. 51 **(C-1331)**.

[103] BPQ EIS, *supra*, note 29, Table of Concordance and Summary Report at p. 4 **(C-1092)**.

approximately 120 hectares.[104] The plant area would occupy approximately 12 hectares of the 152 hectares site.[105]

193. A few comparative statistics:

Attribute	**WPQ**	**BPQ**
Size of site	152 ha	354.5 ha
Active quarry area	120 ha	180 ha
Rock Reserves	100 million tonnes	400 million tonnes[106]
Annual rock production	2 million tonnes/year[107]	7.5 million tonnes/year, peak production[108]
Frequency of blasting	Start up: once per week Full production: once every two weeks: 24 days per year[109]	Start up: 30 days/year Full production: 200 days per year[110]
Vessel rock shipments	52 ships per year	90-100 ships per year

194. In BPQ, there will be about double the number of ships providing aggregate transportation compared with similar shipping at WPQ. At BPQ, approximately 90-100 ships will be loaded per year once the plant reaches peak production.[111] On the other hand, WPQ anticipated that shipments by water would take place once per week throughout the year (*i.e.*, 52 times per year).[112]

195. In BPQ, while blasting will occur 30 days per year during the initial project phase, it will increase to about 200 days per year at full operation.[113] In contrast, blasting in WPQ was

[104] Bilcon of Nova Scotia, Whites Point Quarry and Marine Terminal, Revised Project Description (November 2006), [WPQ Revised Project Description] at p. 6 **(C-640)**.

[105] *Ibid.,* **(C-640)**.

[106] BPQ EIS, *supra*, note 29, Table of Concordance and Summary Report, at p. 4 **(C-1092)**.

[107] WPQ Revised Project Description, at p. 6, **(C-640)**.

[108] BPQ EIS, *supra* note 29, Table of Concordance and Summary Report, at p. 4 **(C-1092)**.

[109] WPQ EIS, Appendix Volume III, Tab 9 Blasting Plan (March 2006) **(C-001)**, at p. 1.

[110] BPQ EIS, *supra* note 29, Table of Concordance and Summary Report, at p. 22 **(C-1092)**.

[111] *Ibid.,* at p. 23 **(C-1092)**.

[112] WPQ EIS, Chapter 9.3.8., *supra*, note 34, at p. 67 **(C-001)**.

[113] BPQ EIS Summary Report, at p. 22 **(C-1092)**.

anticipated to take place once per week during quarry start up and once every two weeks (24 days per year) during full production.[114]

196. The Proponent in BPQ identified a number of potential risks to marine mammals, reptiles and fish as a result of shipping, including noise, collisions, and increased sedimentation and turbidity. These expected disturbances were noted by the CEA Agency in its Environmental Assessment Report (EAR):

> "Additional effects on marine species at risk would be similar to those for marine fauna as a whole (section 6.2), and include effects of ships (e.g., increased sedimentation and turbidity, noise, potential collisions) and disturbance from pile driving, shore blasting, and other construction activities. The proponent predicted that mitigation measures for marine species and habitat (as discussed in section 6.2) would also effectively mitigate potential effects on marine fish, mammals, and reptile species at risk that may occur in the affected marine environment."[115]

197. In the EAR, the Agency had the following recommendations to mitigate these potential effects:

> **Implement measures during operations to mitigate the risk of collisions between vessels and marine mammals and sea turtles** taking into consideration the Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas. The measures include:
>
> - requiring vessels associated with the Project to travel at a speed limit of 10 knots during vessel transit between shipping lanes and the marine terminal;
> - conducting and recording observations for marine mammals and sea turtles during vessel transit between shipping lanes and the marine terminal;
> - requiring vessels associated with the Designated Project to slow down to less than 7 knots when within 400 m of the nearest marine mammal or sea turtle; and
> - reporting collisions with marine mammals and sea turtles between shipping lanes and the marine terminal within 2 hours to the Canadian Coast Guard, and notifying Aboriginal groups in writing."[116]

198. The Agency concluded that "after taking into account the implementation of the mitigation measure, the Project is not likely to cause significant adverse effects on marine and migratory bird species at risk".[117]

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[114] Bilcon of Nova Scotia, Whites Point Quarry Environmental Impact Statement – Appendix Volume III, Tab 9 Blasting Plan (March 2006) at p. 1 **(BIL-M-90)**.

[115] CEA Agency, *Black Point Quarry Project Environmental Assessment Report,* (2016) [BPQ EAR] at p.52, available online: http://www.ceaa-acee.gc.ca/050/documents/p80064/114132E.pdf **(C-1331)**.

[116] BPQ EAR, at pp. 54-55 **(C-1331)**.

[117] *Ibid.*

199. Subsequent to the EAR being issued by the Agency, the federal Minister of the Environment issued a Decision Statement that approved the BPQ project and that imposed the following conditions related to the potential of vessel and whale interaction:

> 3.6 For Designated Project-related vessels transiting between shipping lanes and the marine terminal, the Proponent shall implement measures to mitigate the risk of collisions with whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles taking into account the Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas. The measures shall include:
>
> 3.6.1 conducting and recording observations for whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles;
>
> 3.6.2 requiring that vessels respect speed profile applicable to the operation of the Designated Project subject to navigational safety, to prevent or reduce the risk of collisions between vessels and whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles; and
>
> 3.6.3 reporting collisions with whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles within 2 hours to the Canadian Coast Guard, and notifying Indigenous groups in writing.[118]

200. The Minister's Decision Statement affirmed that with the implementation of mitigation measures and compliance with the above and other terms and conditions, "the Project was not expected to have significant adverse environmental effects" referred to in CEAA 2012".[119]

201. It is notable that WPQ's proposed mitigation measures for marine mammals[120] are remarkably similar to the conditions imposed on BPQ. In WPQ, Bilcon proposed measures that include:

- Observation of shipping channel and safety zone for presence of marine mammals
- Vessel speed reductions and/or course alteration in case of whale sightings within designated approach/departure route
    - In its Response to Information Requests Document, Bilcon indicated that "expected speed upon exiting the inbound shipping lane would be less than 10 knots and 2 to 5 knots while beginning manoeuvring to the marine terminal, depending on sea conditions"[121] although 12 knots is stated in some parts of the EIS.[122]

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[118] Honourable Catherine McKenna, *Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012 for the Black Point Quarry Project*, April 26, 2016 at p.7, available online: <http://www.ceaa-acee.gc.ca/050/documents/p80064/114133E.pdf>. **(Found at Appendix F of this Report) (C-1333)**.

[119] *Ibid.,* at p. 1.

[120] Bilcon EIS, Responses to Information Request, Table 3.11, Chapter 8.1, p. 30 **(C-634)**.

[121] WPQ Responses, at Ch 9.2.3, p 52 **(C-636)**.

[122] *Ibid.*, Ch 9.2.3, p. 5.

- Marine mammal interactions within the vessel turning radius are unlikely due to the slow movement of the vessel while manoeuvring into and out of the berth.[123]

202. Bilcon also provided detailed information on how it would conduct visual observation of marine mammal behaviour and test the effectiveness of visual observation methods as part of its monitoring commitments.[124]

203. Similarly to recommendations of the Agency in respect of whales in the BPQ project, Bilcon proposed working in concert with Transport Canada and DFO to spot whales along the shipping route as follows:

> "Although not a specific responsibility of Bilcon of Nova Scotia Corporation, the following mitigation measures are currently in place by Transport Canada and Fisheries and Oceans Canada. Vessels transporting rock materials from the Whites Point Quarry will use the designated inbound/outbound shipping lanes shown on the Canadian Hydrographic Chart.
>
> Mitigation measures specific to the proposed ship route to and from the inbound/outbound shipping lanes may be more effectively implemented by Bilcon of Nova Scotia Corporation through direct communication with the vessel captain. This would require cooperation and communication between whale research vessels and local whale watching boats to report sighting locations of right whales to Bilcon of Nova Scotia Corporation . . . Bilcon of Nova Scotia Corporation is also committed to cooperating with the North Atlantic Right Whale Recovery Team to improve the right whales chances for recovery."[125]

The Belleoram Quarry and Marine Terminal Project

204. The Belleoram Quarry (Continental Stone) and Marine Terminal Project (see Appendix E of my 2011 First Expert Report) is also an appropriate comparator project as to whale and lobster habitat that was not referenced by Ms. Griffiths or Dr. Blouin.

205. The Project was to be located on the coast of the Atlantic Ocean for the purpose of exporting the crushed rock to foreign markets.[126] A CSR EA was processed under CEAA in 2006-2007. Just as in WPQ, the Belleoram project was to be located close to coastal/marine environments and located about one kilometer away from a community. A Canadian government official noted that the WPQ and Belleoram were very similar,[127] a fact

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[123] *Ibid.,* at Table 3.11.

[124] *Ibid.,* at 9.2.3, pp. 68-69.

[125] Bilcon EIS, Chapter 9.2.13, p.132-133 **(C-001)** https://www.novascotia.ca/nse/ea/whitespointquarry.eis.asp. **(C-0001)**.

[126] Estrin First Report, at paras. 34-36.

[127] Internal Environment Canada E-mail from Kevin Blair to Jeanette Goulet **(C-189)**.

highlighted by the Arbitral Tribunal in its Award.[128] One major difference was that the Belleoram Project would be much larger than WPQ, covering six times the area and producing up to 300% more rock annually than WPQ. See Appendix E of my First Expert Report for details.

206. The Belleoram Project was to be situated in an area that would result in potential effects on North Atlantic Right Whales, Blue Whales, Fin Whales and leatherback turtles.[129] The area is also proximate to lobster fishing grounds.[130]

207. Aggregate shipping frequency in the Belleoram Project was similar to that of WPQ. Belleoram was estimated to have ships attend every five to seven days (or approximately 52 to 73 times per year):

> "With an anticipated aggregate production level between 40,000 and 80,000 tonnes weekly, the 60,000 tonne capacity (anticipated) carriers will be required to service the site every 5-7 days depending on the particular production level at that time."[131]

208. The potential for vessel interaction with whales was recognized in the Belleoram CSR Report and the proponent in Belleoram proposed to mitigate the potential of collisions with whales by reducing ship speeds. The CSR stated the following:

> "However, the passage of bulk aggregate carriers to service the quarry once every 5-7 days will not greatly increase the concentration of marine traffic in the region. Further, Laist et al. (2001) noted that whales are not usually seen beforehand or are seen too late to be avoided, and suggest that a reduced speed is a beneficial way to effectively reduce lethal ship strikes with whales. Therefore, the slow speed the ships will maintain within Belle Bay approximately 2 knots, will serve to minimize the possibility of a collision with any whales in the area. For safety and feasibility reasons the bulk aggregate carriers must travel at speeds approaching 13 knots outside of Belle Bay."[132]

209. It is noteworthy that this same study by Laist et al. was similarly relied upon by Bilcon in WPQ[133] and the same approach was used in BPQ.[134] DFO in BPQ stated that it was "satisfied with the proponent's response".[135]

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[128] Award, at para. 697.

[129] AMEC, *Belleoram Marine Terminal Project Comprehensive Study Report* (August 23, 2007), at p. 99 **(R-357)**.

[130] *Ibid.,* at p. 125.

[131] *Ibid.,* at p. 22 **(R-357)**.

[132] Belleoram CSR Report, at p. 106 **(C-190)**.

[133] WPQ Responses to Information Requests, Chapter 10 at p. 22 **(C-573)**.

[134] BPQ EAR, at p. 55 **(C-1331)**.

[135] Fisheries and Oceans Canada letter to Micheline Savard (CEAA) dated May 11, 2015, *DFO Comments on the Proponent's Responses to the Information Requests on the Black Point Quarry Project EIS* **(C-1336)**.

210. In addition, any potential outstanding impacts to whales in Belleoram were to be addressed by working with DFO in the same way that proponent-agency collaboration was proposed for WPQ, "The proponent will discuss options to mitigate for disturbance of whales with DFO, including any anticipated monitoring requirements".[136]

211. Following review of the CSR, the Federal Environment Minister accepted that "The project, taking into account the mitigation measures described in the Comprehensive Study Report is not likely to cause significant adverse environmental effects; and the mitigation measures and follow up program described in the Comprehensive Study Report are appropriate for the proposed project." Based on these findings the Minister referred the project back to the responsible authorities so they could take "appropriate action" under s. 37 of CEAA. *i.e.*, issue any required federal authorizations or approvals. In doing so, the Minister required that the RAs ensure implementation of the mitigation and follow up measures described in the CSR.[137]

Bear Head LNG Facility

212. The Bear Head LNG Facility in Canso, Nova Scotia is a further comparator project. The Registration Documents for the project (2004) stated that the facility was predicted to have between 70 and 135 ship visits per year.[138] For the purposes of its assessment, the proponent assumed that several species of marine mammals, including North Atlantic right whales, would be present.

213. DFO prepared a screening assessment for the project that included a review of the risks the project could potentially cause, including:

> "• Increased stress to marine mammals due to structures, lights, noise, vessel traffic, etc. may result in avoidance of the area;
>
> • Interference with communications between marine mammals; and
>
> • Increased risk of collisions with vessels."[139]

214. With respect to the increased risk of collisions DFO's screening assessment report noted "standard vessel operation procedures will be followed including avoidance measures" as a

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[136] Belleoram CSR Report, Executive Summary, page V **(C-190)**.

[137] Canadian Environmental Assessment Agency, *Environmental Assessment Decision Statement,* November 20, 2007, available online: http://www.ceaa.gc.ca/052/document-html-eng.cfm?did=24387 **(C-448)**.

[138] Jacques Whitford, *Environmental Assessment for the Proposed Bear Head LNG Terminal – Bear Head, Nova Scotia,* (May 2004) at p.2-6, available online: http://www.novascotia.ca/nse/ea/bearHeadLNGTerminal/Section_2.pdf **(C-1425)**.

[139] Fisheries and Oceans, *Canadian Environmental Assessment Act (CEAA) Screening Environmental Assessment Report – Strait of Canso LNG Marine Wharf*, (July 2004) at p.9, available online: http://www.ceaa-acee.gc.ca/050/documents/2708/2708E.pdf **(R-335)**.

mitigation measure for project effects on marine mammals.[140] Upon review of the screening assessment report that included the proposed mitigation measures regarding the potential for increased risk of marine mammal collisions with vessels, Transport Canada, as the federal decision-maker agreed that the Project was not likely to have significant adverse environmental effects:

> "A decision was taken on August 9, 2004 and was that the authority may exercise any power or perform any duty or function with respect to the project because, after taking into consideration the screening report, and taking into account the implementation of appropriate mitigation measures and comments from the public, the authority is of the opinion that the project is not likely to cause significant adverse environmental effects."[141]

Fundy Tidal Energy Demonstration Project

215. The Fundy Tidal Energy Demonstration Project (FTEDP) was a demonstration project to test in-stream tidal devices and assess their potential to generate electricity. It is another project where effects on the right whale from project vessel traffic and noise (from turbines) were considered.

216. The FTEDP is also an appropriate comparator given that the undertaking is also located by the Bay of Fundy, and many of the environmental predicted effects on marine mammals were similar to effects identified in WPQ. In addition, the project was predicted to impact the local fishing industry, including the lobster fishery.

217. In the FTEDP, "Marine Mammals" was selected as a Valued Environmental Component (VEC) (given the "important role that marine mammals play in the marine system" and the fact that "these species are also of public concern and of socio-economic importance for the tourism industry in the Bay of Fundy (*i.e.*, whale watching)".[142]

218. Potential interactions between the Project and marine species at risk identified by the proponent in FTEDP were similar in nature to concerns identified in WPQ, namely:

- Mortality due to vessel strikes;
- Disturbance caused by the presence of the turbines and installation and monitoring equipment and vessels, particularly with regard to collisions;

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[140] *Ibid.*

[141] CEAA, *Archived – Liquefied Natural Gas (LNG) Marine Wharf – Final Decision,* (August 2004), available online: http://www.acee-ceaa.gc.ca/052/details-eng.cfm?pid=61#decision **(C-1426)**.

[142] AECOM, *Environmental Assessment Registration Document – Fundy Tidal Energy Demonstration Project, Volume 1: Environmental* Assessment (June 2009), online: https://novascotia.ca/nse/ea/minas.passage.tidal.demonstration/Minas_EA_Report.pdf at p. 154 **(C-1427)**.

- Noise and vibration generated by the turbines during operation leading to masking of cetacean vocalization; temporary threshold shift or hearing impairment; behavioural effects (*e.g.*, avoidance, changes in migration, or reproductive and feeding behaviours); or physical injury;
- Indirect effects through changes in prey distribution and abundance; and
- Accidental spills leading to contamination of species at risk[143]

219. It is notable, that the proponent's significance assessment in the FTEDP on the right whale was very similar to that of Bilcon's. The proponent in FTEDP stated in its EA Report:

> "Based on the improbability of an encounter with a right whale at the Project location, and given these preventative mitigation measures, the potential for significant adverse environmental effects on marine species at risk in [sic] considered not significant." [144]

220. Similarly, Bilcon's significance assessment with respect to right whales and vessel interaction provides:

> "Considering the low density of right whales, the slow speed of vessels, and low probability of interactions along the route from the shipping lanes to the marine terminal, this would result in a long term, insignificant negative effect, of national/international scale." [145]

221. It is noteworthy that the proponent in FTEDP proposed the same mitigation measures in respect of vessel strikes as Bilcon proposed in WPQ. The proponent noted:[146]

> "Vessel collisions with marine mammals are more likely to occur when vessel speeds are high and with slow-moving marine mammals such whales. Such events are rare. Collisions with dolphins and harbour porpoises are reduced given that these mammals are fast swimmers and are able to swim away or dive to avoid vessels. The likelihood of collision can be decreased significantly by vessels maintaining constant speed and course while in transit (Thomson *et al.* 2000), as would be the case in this Project."

222. Despite these identified potential effects on marine mammals, the Nova Scotia Environment Minister's EA Approval for the FTEDP did not directly address the effects of the project on marine mammals. Instead, the terms and conditions of the Approval deferred the need to address these effects as part of a future environmental effects monitoring program.[147]

223. What is notable about these comparator projects is that they used remarkably similar mitigation measures as Bilcon proposed, and that in each case these were found to be

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[143] *Ibid.,* at p. 167.

[144] *Ibid.,* at p. 168 (emphasis added).

[145] WPQ EIS [C-001] at Volume VI, Ch. 9.2.13 at p. 133 (emphasis added).

[146] *Ibid.,* at p. 156; see also p. 169 (emphasis added).

[147] Minister Sterling Belliveau, Department of the Environment, *Environmental Assessment Approval – Fundy Tidal Energy Demonstration Project – Terms and Conditions for Environmental Assessment Approval*, (September 15, 2009).

acceptable. Coupled with DFO's finding in Undertaking 31, it is evident that Bilcon's mitigation measures to reduce the potential for vessels striking the right whale would also have been accepted.

224. Furthermore, these other project approvals help confirm that Ms. Griffiths' interpretation of "no allowable harm" was clearly wrong (*i.e.*, that not a single whale could be lost). No comparator project referred to this concept and all were approved despite right whales being in the vicinity.

225. Her prognostications that approvability of WPQ would be affected by whales in the vicinity of WPQ is unreasonable in that she failed to identify even one factual basis why reasonable EA reviewers should conclude that WPQ would give rise to SAEE in relation to right whales when comparator BPQ did not.

226. She omits consideration of fact that the BPQ was approved by both Canada and Nova Scotia in 2016, despite the fact that BPQ will generate 100% more aggregate shipping per year than WPQ, in an area also frequented by the right whale.

227. Moreover, many of the mitigation measures criticized by the JRP and Ms. Griffiths, such as the use of observers and the reduction in vessel speed, were also proposed by the CEA Agency in BPQ.[148]

PROGNOSTICATIONS OF MS. GRIFFITHS AND DR. BLOUIN REGARDING INVASIVE SPECIES IMPACTS ON LOBSTER HABITAT FAIL TO CONSIDER CANADA HAS AFFIRMED THE ADEQUACY OF THE *BALLAST WATER REGULATIONS*

228. Ms. Griffiths and Dr. Blouin also prognosticated that WPQ should be found to likely cause SAEE in respect of invasive specifies impacts to lobsters and lobster habitat.

229. On this issue, I again conclude there is no basis to have any confidence in their opinions relating to why these matters would affect the approvability of WPQ, in that they did not mention or consider that

(a) Canada, as the government with regulatory authority in this regard, does not agree that the *Ballast Water Regulations* are insufficient to respond appropriately to potential risks of invasive species; the WPQ JRP had recommended that the *Ballast*

available online: http://www.novascotia.ca/nse/ea/minas.passage.tidal.demonstration/Minas_EA_Conditions.pdf . **(C-1428)**.

[148] Decision Statement Issued under Section 54 of the *Canadian Environmental Assessment Act, 2012* **(Found at Appendix F of this Report) (C-1333)**.

Water Regulations be made more stringent in respect of the potential for invasive species effects on lobster – yet Canada rejected this recommendation;

(b) BPQ was approved by both Canada and Nova Scotia in 2016, relying on the efficacy of the *Ballast Water Regulations*, despite the fact that BPQ will generate 100% more aggregate shipping per year than WPQ, which in turn would transport potentially many times more invasive species to an area in Nova Scotia that also has an important lobster fishery;

(c) Her prognostications that invasive species concerns would affect approvability are unreasonable in that she failed to identify even one specific reason why reasonable EA reviewers should conclude that WPQ would give rise to SAEE in relation to invasive species when comparator projects did not.

230. In her report Ms. Griffiths noted that the WPQ JRP had a number of concerns over the project's effects on lobsters, including the "risk of invasive species transported into the waters of the Digby Neck" and the impact of blasting on lobster on a local scale.[149] Both she and Dr. Blouin speculated that invasive species would lead to SAEE in connection with WPQ.

231. However, neither Ms. Griffiths nor Dr. Blouin took into account that Canada has affirmed the sufficiency of the *Ballast Water Control and Management Regulations* for these purposes. This sufficiency is evidenced by Canada's reaction to the WPQ JRP Recommendation #7. In the WPQ Panel Report, the Panel recommended that the federal government revise the *Ballast Water Regulations* by making them more stringent:

> 7. The Panel recommends that Transport Canada revise its ballast water regulations to ensure that ships transporting goods from waters with known risks take appropriate measures to significantly reduce the risk of transmission of unwanted species.

232. Following receipt of this Recommendation, Canada provided a response to the Panel that recognized the importance of the regulations, but provided no concrete indication that any revision to the regulations would occur:

> "Transport Canada recognizes the importance of applying the appropriate ballast water management measures in order to avoid and/or minimize the introduction of invasive species into waters under Canadian jurisdiction, from foreign waters.
>
> After extensive consultations with the industry, environmental groups, stakeholders and other federals agencies, Transport Canada, in June 2006, implemented the *Ballast Water Control and Management Regulations* under the *Canada Shipping Act*.

[149] *Supra,* note 1, at para. 97.

> These regulations are intended as an important first step in minimizing the risk of introducing harmful aquatic species into Canadian waters. Transport Canada will continue to consult with the appropriate federal authorities and work with the industry, scientific community and environmental groups, and will consider any recommendations made with respect to improving the *Ballast Water Control and Management Regulations*."[150]

233. The response by Canada to this recommendation affirmed that Canada considered the *Ballast Water Regulations* to be an appropriate means of mitigating adverse effects to species such as lobster by way of invasive species.

234. Ms. Griffiths and Dr. Blouin did not acknowledge this reality, and therefore their prognostications of invasive species SAEE are unfounded.

235. DFO, in its presentation to the JRP, agreed with Bilcon's approach to use the regulations, "as ballast water is one of the main pathways for the introduction of invasive species, the *Ballast Water Control and Management Regulations* will help reduce the risk of introductions".[151] Although ships servicing the WPQ Project would have been legally required to comply with these regulations, the JRP was not satisfied: it went on to recommend that DFO make its regulations more stringent – a recommendation that, as noted above, was not acted on by federal officials.[152]

236. Ms. Griffiths and Dr. Blouin also omit to consider that in similar projects with marine terminals, potential impacts of invasive species were not considered to be significant because federal officials were satisfied with the appropriateness of federal *Ballast Control and Management Regulations* and other measures the proponent could take to mitigate such concerns. For instance, in the Belleoram Quarry and Marine Terminal CSR EA (see Appendix E of my First Expert Report), federal officials accepted that potential impacts from ballast water would not be deemed an issue if the *Ballast Water Control Regulations* were followed:

> "All shipping will be performed by a licensed contractor who fully complies with environmental mitigation measures outlined by the Proponent. Specifically, adherence to the Canada Shipping Act's Oil Pollution Prevention Regulations and the Ballast Water Control and Management Regulations will be mandatory, with no dumping of ballast or bilge when passing protected bird areas. Further, a Ballast Water Management Plan and reporting schedule, as per Transport Canada's 'A Guide to Canada's Ballast Water Control and Management Regulations' (2006) will be made to help ensure any ship's operation leaves as little footprint to the area as possible. Ships' crews will be trained in oil spill prevention and clean-up, with spill

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[150] DFO, The Government of Canada's Response to the Environmental Assessment Report of the Joint Review Panel on the Whites Point Quarry and Marine Terminal Project (the Project) at p.3, online: https://ceaa-acee.gc.ca/B4777C6B-docs/WP-1833.pdf **(R-383)**.

[151] DFO presentation to JRP, p. 20 **(R-498)**.

[152] Estrin First Report, at para. 44.

> kits on board at all times (*e.g.*, Containing absorbents, floating booms and waste containers). Mitigative measures are also outlined in Section 2.2.3 and will be included in the EPP and Contingency Plans."[153]

237. In BPQ, the proponent indicated that it intends to ship the product to markets along the eastern and Gulf coast markets of the United States. Consequently, ballast water, if brought into Chedabucto Bay and released untreated, could introduce invasive species into the local environment and threaten local species. In Nova Scotia, introduction of invasive species could include green crab, several species of sea squirts (tunicates), Dead Man's Fingers (Codium fragile) and sea-mat or lacy crust bryozoan (Membranipora menbranacea).[154]

238. Despite the similarity of the WPQ and BPQ shipping route between the eastern coast of the U.S. and Nova Scotia, ballast water that potentially hosted invasive species was not considered a significant concern in BPQ, even though BPQ would involve 100% more ship movement annually than WPQ. Although the BPQ proponent recognized that ballast water could affect the valued environmental component of marine species and habitat, it proposed to control ballast water release by following the *Ballast Water Control and Management Regulations* and "the requirements as per the International Convention for the control and Management of Ship's Ballast Water and Sediments".[155]

239. The CEA Agency determined that compliance with the *Ballast Water Control and Management Regulations* was sufficient, despite receiving several comments from an environmental group on this issue that paralleled the JRP critique of the *Ballast Water* Regulations. That group also commented that hull fouling was another major source of invasive species introductions and requested that the proponent be required to provide details on how this impact would be mitigated.

240. The Agency's response, however, indicated it was satisfied with the regulations in place to deal with these issues: "[T]he proponent, acting in accordance with Transport Canada's Regulations would effectively mitigate potential effects and the likelihood of those effects, resulting from the release of non-compliant ballast water and biofouling associated with the Project".[156]

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[153] Belleoram CSR Report, p. 106 **(C-190**).

[154] BPQ EAR, at p. 40.

[155] Vulcan Materials Company, "Black Point Quarry Project, Municipality of the District of Guysborough, NS – Environmental Impact Statement" (February 2015), online: https://www.novascotia.ca/nse/ea/black-point-quarry/part-0-final-summary-report_english.pdf at 63. **(C-1340)**.

[156] BPQ EAR, at p. 133 **(C-1331)** (emphasis added).

241. Again, it is puzzling that Ms. Griffiths and Dr. Blouin omitted to reference or consider this determination of the CEA Agency on this issue. The expert Agency's conclusion on this issue again affirms that mitigating potential impacts of ballast water on aquatic species through compliance with federal regulations is appropriate.

242. With respect to the impacts of blasting on lobster, Ms. Griffiths' refers to the uncertainty and lack of information surrounding this issue. Although DFO recommended that Bilcon carry out a monitoring program with input from DFO should the project proceed, Ms. Griffith argued that given the importance of the lobster fishery in southwestern Nova Scotia, the lack of scientific evidence was an unacceptable gap when trying to determine if the project could proceed. She went further to state that even if Bilcon undertook the more rigorous monitoring that had been recommended by DFO, it would not materially add to the body of scientific knowledge needed to properly understand interactions between quarry development and lobster.

243. However, Ms. Griffiths failed to provide an explanation as to why such monitoring was insufficient, notwithstanding that such monitoring was recommended by DFO, and why more extensive studies were necessary. Further, neither Ms. Griffiths nor Dr. Blouin made reference to how in BPQ, the CEAA Agency reviewed potential effects of blasting on marine mammals and species.

244. The Agency in BPQ noted the following potential effects of blasting on marine mammals and species:[157]

- Fish mortality from the use of explosives within the pits
- Behavioural changes in fish, crustaceans, and other marine species due to noise and vibrations associated with explosives used during quarrying operations
- Detonation of explosives onshore could injure or kill marine fish and mammals in the immediate nearshore area
- Mackerel fisheries could be affected if noise and disturbance cause changes in the migratory pattern whereby fish remain offshore and would directly from Black Point

245. The Agency also noted that additional effects on marine species at risk would be similar to those for marine fauna as a whole, including effects from blasting.[158]

246. In addition, local fishers were concerned about the use of explosives, specifically whether noise and vibrations would affect lobster and mackerel behaviour.[159] Other concerns raised

[157] BPQ EAR, at pp. 39-40 **(C-1331)**.

[158] BPQ EAR, at p. 52 **(C-1331)**.

[159] BPQ EAR, at p. 41 **(C-1331)**.

by the local commercial fishing industry included concerns about whether blasting will push lobsters offshore and cause the female lobster or snow crab (or other egg carriers) to drop their eggs early.[160]

247. Despite both the Agency's list of potential effects of blasting on marine mammals and species, and the additional concerns of local fishers, DFO advised that it was satisfied that with the implementation of mitigation measures, impacts on marine species and habitats are unlikely to be significant.[161]

248. In the result the Agency found that requiring the BPQ proponent to conduct blasting in accordance with the federal and Nova Scotia guidelines would be sufficient.

Agency's Recommended Mitigation Measures in BPQ
Conduct blasting in accordance with the *Measures to Avoid Causing Harm to Fish and Fish Habitat* on Fisheries and Oceans Canada's website and the *Nova Scotia Pit and Quarry Guidelines* and develop and implement site-specific mitigation standards to the satisfaction of Fisheries and Oceans Canada to protect marine species if effects thresholds are exceeded.

249. The federal Minister of Environment agreed with the Agency's recommendation as can be seen by condition 3.7 in the federal Decision Statement:

Condition 3.7
3.7 The Proponent shall, unless otherwise authorized under the *Fisheries Act*, implement measures to prevent or avoid the destruction of fish, or any potentially harmful effects to fish habitat, during all phases of the Designated Project when using explosives in or around water frequented by fish and shall consider blasting by taking into consideration Fisheries and Oceans Canada's *Measures to Avoid Causing Harm to Fish and Fish Habitat* and the *Nova Scotia Pit and Quarry Guidelines*.[162]

250. In WPQ, Bilcon referred to the then current guidelines (*Guidelines for the Use of Explosives in or Near Canadian Fisheries Water*), which also addressed blasting near water. The measures in the Guidelines are similar to measures on blasting listed in the Fisheries and Oceans' *Measures to Avoid Causing Harm to Fish and Fish Habitat*.[163]

251. The considered recommendations of the expert CEA Agency in BPQ that blasting effects on marine mammals and species would be appropriately mitigated by the proponent carrying out blasting in accordance with the federal and provincial guidelines, and the federal

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[160] Vulcan Materials Company, "Black Point Quarry Project Environmental Impact Statement" (February 2015) at pp. 48-50, Table 11-7 **(C-1340)**.

[161] BPQ EAR, at p. 41 **(C-1331)**.

[162] Decision Statement Issued under Section 54 of the *Canadian Environmental Assessment Act, 2012*, Black Point Quarry Project, April 26, 2014 (**Found at Appendix F of this Report) (C-1333)**.

[163] See D.G. Wright and G.E. Hopky, *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (1998), available online: http://www.dfo-mpo.gc.ca/Library/232046.pdf at p. 8-9 **(R-115)** and Fisheries and Oceans Canada, *Measures to Avoid Causing Harm to Fish and Fish Habitat,* online: http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html at "Fish Protection" **(C-1429)**.

Environment Minster's acceptance of that recommendation manifested through the imposition of condition 3.1 in the BPQ Decision Statement, were not in any respect recognized or considered by Ms. Griffiths and Dr. Blouin. This is most perplexing as the BPQ and WPQ projects are so highly similar. It is manifestly relevant for anyone offering an opinion about approvability of a large quarry and marine terminal in Nova Scotia to not ignore, but rather carefully consider how their prognostications on approvability compare to the Agency's recommendations and the federal Minster of Environment's decisions on such issues.

252. It is also noteworthy that in its comments on potential blasting effects on marine mammals and species, the Agency found the following:[164]

> **Effects cannot be reduced to zero** but they can be managed through standard mitigation measures. **Adherence to existing regulatory standards or guidelines** for acceptable suspended solid levels in settling pond discharges **and acceptable blasting procedures would mitigate associated potential effects**. Serious harm for which a *Fisheries Act* authorization would be required would be offset with an appropriately-designed and reviewed fisheries offsetting plan. Compliance with subsection 36(3) of the *Fisheries Act*, which prohibits the discharge of a deleterious substance into waters frequented by fish or in an area from where it may enter such waters, would protect fish. **The Agency is aware that the effects of certain activities (*e.g.*, blasting) would continue throughout the life of the Project. Overall, the Agency agrees with the proponent's evaluation that the magnitude and geographic extent of these effects on marine species and habitat would be low**.

253. Again, Ms. Griffiths' and Dr. Blouin's prognostications do not take the expert Agency's perspectives into account.

THE STANDARD EA REVIEW AND APPROVAL PRACTICES THAT ARE IGNORED BY MS. GRIFFITHS AND DR. BLOUIN

254. It is important to consider that these witnesses assert that their prognostications are based on their experience as former panel chairs. However, this approach would require this Tribunal to look at the issue of approvability using the wrong type of glasses.

255. Since there has never been, except for WPQ, a review panel for any Nova Scotia quarry EA under the applicable legislation, *i.e*., all others are processed and recommended for approval by the Nova Scotia Environment's EA personnel without a review panel being appointed, the relevant lens to use in examining "approvability" is what actually happens in the standard Nova Scotia EA review process for quarries over 4 hectares in size, *i.e.*, as a "class 1 undertaking".

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[164] BPQ EAR, at p. 42 [Emphasis added] **(C-1331)**.

256. Using that lens provides a clear and unequivocal result: since 2000, Nova Scotia has never met a quarry project seeking EA approval it did not like and approve.

257. This is not an aberration: rather, it is consistent with the fact that the Province of Nova Scotia has had long-standing policy to provide proponents of such projects with greater certainty as to what is the expected and normal outcome of the EA review process.

258. This is entirely consistent with the value and importance that that the province places in its mineral industry. For example, in the Nova Scotia publication "Minerals – A Policy for Nova Scotia 1996", the government states:

> "Industrial minerals have been consistent contributors to the province's mineral production for over 200 years. These include . . . building stone, sand and gravel, and crushed rock."
>
> "The mineral industry is an important participant in the province's economic strategy, especially with its contribution to value-added production and export revenue."
>
> "The government of Nova Scotia recognizes mineral exploration and mining as a key sector contributing to jobs, wealth and a high quality of life for Nova Scotia."
>
> "The government will provide leadership by implementing the policy and ensuring that the necessary conditions are maintained for the mineral industry to create wealth for present and future generations of Nova Scotians."[165]

259. By using only a review panel focus, these witnesses avoid discussing the relevance and validity of their critiques in terms of the actual practice used to approve Nova Scotia EAs for quarry projects. They also fail to make any reference to the results of that practice, where every complete EA application has been approved, despite issues similar to those arising in the WPQ application being present in many of these.

260. By closing their minds to the actual Nova Scotia quarry approval process, these witnesses have also omitted to cast their gaze up the coast of Nova Scotia so as to examine and consider why in 2016 Nova Scotia and Canada gave EA approval to the much larger Black Point Quarry (BPQ), a project that could not be more similar to the WPQ and which was processed under the same legislation as WPQ.

261. Their refusal to consider or even reference the BPQ approval process is especially perplexing in that the BPQ (a) is located in an area that has the very same primary sensitivities on which they focus their concerns – right whales and lobsters; and (b) involves twice as much shipping of aggregate in ocean areas hosting invasive species.

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[165] *1996 Mineral Policy for Nova Scotia*, Chapter 1, pp. 2-4, https://novascotia.ca/natr/meb/pdf/minpol.asp (**C-007)**.

262. These witnesses in effect ask this Tribunal to accept the reliability of their prognostications without informing the Tribunal that issues similar to those they focus on in their witness statements were present in the BPQ project but that the BPQ project still received EA approval from both Canada and Nova Scotia.

263. In effect these witnesses are urging this Tribunal to accept that they know better as to what would or would not be approved than government officials who are charged with the responsibility and have the real world experience of deciding EA approvability.

264. They also do not acknowledge or reference before reaching their prognostications the following facts:

(a) 50 applications for EA approval of quarries, mines, sandpits and marine terminal projects in Nova Scotia were processed in the period 2000-2016 and all but WPQ received EA approval (of the 50 projects, 7 were marine terminals and one quarry project was withdrawn);

(b) approximately 100 other projects also applied for and received EA approval in Nova Scotia in the same period, many of which had the potential for significant environmental effects or concerns;

(c) that comparator projects with some of the key issues referenced by these witnesses were approved by Federal and Nova Scotia Environment Ministers.

265. In my professional opinion, it is not only unreasonable but indeed irrational to articulate arguments as to why WPQ would have had doubtful approvability based on factors raised by these witnesses for Canada, when these same witnesses do not consider nor comment on the fact that such issues did not in fact affect the recommendation of the expert CEA Agency to have Canada approve the BPQ, nor did such issues affect the approval of the BPQ by the Nova Scotia Environment Minister. In other words, the similar issues on which these witnesses base their prognostications that cast doubt upon the approval of the WPQ did not in fact affect the approvability of BPQ.

Details About the Standard EA Practice in Nova Scotia for Quarries and Marine Terminals

266. A review of Nova Scotia EA practice in the approval of quarries and marine terminals prior to and since the WPQ is highly relevant in understanding Nova Scotia's standard EA practice and why approval of the WPQ under this process would be virtually certain.

267. Since at least 2000, Nova Scotia never met a quarry or marine terminal project it did not like and approve.

268. As noted above, between 2000 and 2016 there were approximately 50 quarry, mine, sand pit and marine terminal applications for EA approval under the NSEA. (One quarry application was not acted on by the Minister, since he determined there was insufficient information to make a decision.)[166] All of the other 49 applications, except for WPQ, were approved. Of the 49 projects, 44 were for quarries, pits, and mines. Six applications were for major marine terminals: Point Tupper Marine Coal Terminal (2003); Bear Head Terminal for LNG ships (2004); Keltic Petrochemical and LNG facility 2007;[167] Melford International Terminal Project (involving the creation of a new deep water port and intermodal rail container terminal) (2008); Sydney Harbour Access Channel Deepening and Sydport Container Terminal (2009); and Goldboro LNG Plant and Marine Terminal (2014). See Appendix C to my March 2017 Expert Report, "Complete EA Applications Approved 2000-2016 for Nova Scotia Quarries, Mines, Sand Pits and Marine Terminals".

269. These statistics demonstrate that Nova Scotia's unequivocal standard EA practice under the NSEA -- before, during, and since consideration of the WPQ -- is to approve every complete EA application relating to such projects.[168]

270. A key component of standard Nova Scotia EA practice is to approve such projects with terms and conditions attached. This standard practice was applied to the BPQ Project, which was approved without a hearing under CEAA 2012 and the NSEA[169] by both the Federal and Nova Scotia Environment Ministers on April 26, 2016.

271. EA project approvals by Nova Scotia for all completed quarry and marine terminal applications demonstrates the generic potential environmental effects of quarries and marine terminal projects are well known to Nova Scotia Environment officials. Professional consultants, as well as federal and Nova Scotia officials, were experienced and familiar with the potential environmental effects of these projects, as well as mitigation techniques that could render their environmental effects "not significant". They knew as a result of their preparation or review of these EAs that the predicted and acceptable result of applying

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[166] Point Aconi Phase 3 Surface Coal Mine – the Minister indicated he could not make a decision without the proponent providing further information, which apparently was not provided; in that case pursuant to s. 34(2) of the NSEA the application can be deemed withdrawn.

[167] Information about the Keltic project is elaborated at paras. 386-406 of my First Expert Report filed in the Liability Phase of the Arbitration.

[168] See Appendix C of David Estrin's March 2017 Expert Report.

[169] Minister of Environment and Climate Change, *Black Point Quarry Environmental Assessment Decision Statement* (26 April 2016), online: http://ceaa.gc.ca/050/document-eng.cfm?document=114133 **(Found at Appendix F of this Report) (C-1333)**; [BPQ Canada Approval] Minister of Environment, *Black Point Quarry Environmental Assessment Decision* (26 April 2016), online: http://www.novascotia.ca/nse/ea/black-point-quarry/Decision.pdf [BPQ Nova Scotia Approval]. **(Found at Appendix G of this Report) (C-1430)**.

essentially similar types of mitigation measures was that there would be "non-significant" project effects after mitigation.

272. In practice, the predicted typical effects and the mitigation measures usually prescribed for these projects are almost "boiler plate" both for consultants and for the federal and provincial agencies who review and approve environmental assessments for these projects. It is not "rocket science" to identify the generic potential impacts of quarries and marine terminals and the mitigation measures that could be applied to their approval to achieve "no significant effects". See Appendix D to my March 2017 Expert Report, where the residual effects after mitigation for five comparator projects were separately found in each project to be "non-significant" for all VECs (see Appendix D to my March 2017 Expert Report, specifically at the following pages: 8, 10, 12, 16, 20, 22, 25, 26, 28, 31, 33, 34, 36, 39, 40, 42, 45, 48 and 49).

273. Yet, in his Expert Witness Statement, Dr. Blouin makes the following comments:

> "In Nova Scotia, there is no such thing as 'standard' or 'unequivocal' practice with regard to the outcome of an EA review. In theory, all projects that are reviewed to a review panel are 'approvable'."
>
> ". . . The provincial review process is based on the panel's evaluation of whether the environmental effects of any undertaking will potentially result in 'adverse effects' or 'significant environmental effects'. Review panels do not base their recommendations on the recommendations or outcomes in regard to other projects." [Blouin Witness Statement, paragraphs 36-37]

274. In her Witness Statement, Ms. Griffiths says:

> ". . . I was surprised by Mr. Estrin's suggestion that the Whites Point project would have been approved absent the NAFTA breach because of a 'standard practice in Maritime Canada, and Nova Scotia in particular, for quarry and marine terminal environmental assessments to be approved, and not be rejected'. While Mr. Estrin's assertion focuses on project approval, it is problematic from the perspective of a review panel making recommendations on a project . . . A panel must reach its own conclusions, based on the evidence before it, as environmental assessment is evidence-based, not precedent-based. In my experience, while scientific information from previous environmental assessments may be relevant, conclusions and recommendations made by other panels have no role in panel reviews." [Griffiths Witness Statement, paragraph 36]

275. I do not disagree in general terms with the comments of Dr. Blouin and Ms. Griffiths to the effect that if there was an EA panel review for a quarry, review panel members would be positioned to question a project and its approvability.

276. But these statements by Dr. Blouin and Ms. Griffiths are unhelpful in this Arbitration as they are essentially irrelevant to the issue of approvability of the Whites Point Quarry or, indeed,

any other quarry in Nova Scotia – as there has never, ever been a quarry subject to a panel review in Nova Scotia under applicable legislation, other than the WPQ.

277. Ms. Griffiths' statement is also unhelpful in that she is confusing a panel approach to the EA approvals practice by government officials. My comments about "a standard practice" specifically related to how quarries and marine terminals and environmental assessments in Nova Scotia were never rejected but always approved, with terms and conditions.

278. It is "standard practice" in Nova Scotia that EAs for quarries and marine terminals are approved and not rejected. None of the expert reports filed by Canada have refuted that clear reality.

279. Even Ms. Griffiths acknowledges that there is a "standard approach" used in carrying out an evaluation of project effects. And she puts it in paragraph 55 "guidelines typically follow a standard approach involving selection of Valued Eco-system Components. However, the proponent is encouraged to identify additional VECs as appropriate. The VEC approach is standard in Canadian environmental assessments since 1980s."

280. Indeed, Mr. Geddes, in his Witness Statement, confirms that there is a standard EA review process for Class 1 undertakings (e.g. a quarry larger than 4 hectares). In fact, he refers to it as the "Class 1 projects . . . review process", which he outlines as including:

- pre-registration of the project;
- scoping and planning meetings with the proponent of the project;
- formal registration of the project;
- management of the review of the environmental assessment documents by the public and the relevant government agencies;
- assembling all comments into a report; and
- preparing departmental analysis and the recommendation for the Minister.[170]

281. Mr. Geddes is certainly well-placed to know this as he indicates in his Witness Statement that, "For Class 1 projects, my main tasks were to administer the steps in the review process . . ."

282. This standardized EA review and approval process in Nova Scotia that applies to quarries, mines and sandpits and other similar undertakings greater than 4 hectares in area been in effect prior to and during the period 2000-2016. That process is established formally under

[170] Geddes Report, para. 5.

the "*Environmental Assessment Regulations*", made under Section 49 of the Nova Scotia *Environment Act*.[171]

283. In addition to the *Environmental Assessment Regulations*, Nova Scotia has prepared several documents to guide proponents of projects seeking EA approval:

(a) "Guide to Preparing an EA Assessment Registration Document"[172]

(b) "Nova Scotia Department of the Environment Pit and Quarry Guidelines, Revised May 1999"[173]

(c) "A Proponent's Guide to Environmental Assessment"[174]

"Guide to Preparing an EA Assessment Registration Document"

284. Importantly, Nova Scotia states the purpose of the "Guide to Preparing an EA Registration Document" is "to provide consistency and a greater degree of certainty regarding the information submitted to register a pit or quarry undertaking for environmental assessment in Nova Scotia".

285. Also important for quarry proponents and government reviewers is that Nova Scotia recognizes a standard approach for EAs is useful: "the issues addressed in this Guide are those typically associated with pit and quarry developments".[175]

286. In fact, this Guide outlines the type of information that must be contained in the Registration Document, which includes the following:

Scope

- Purpose and Need for the Undertaking
    - consideration of alternatives
- Scope of the Environmental Assessment
    - public involvement
    - methods of involvement
    - public comments
    - steps taken to address public concerns
- Description of the Undertaking
    - geographical location

[171] See exhibit **R-6**.

[172] See exhibit **R-81**.

[173] See exhibit **R-74**.

[174] See exhibit **R-163**.

[175] See exhibit **R-81** at p.i.

- physical components
- site preparation and construction
- operation and maintenance
- decommissioning and reclamation

- Valued Environmental Components and Effects of Management
  - bio-physical environment
    - geology
    - surface water
    - groundwater
    - wetlands
    - flora and fauna species and habitat
    - fish and fish habitat
    - atmospheric conditions / air quality
    - noise levels
  - Socio-Economic Conditions
    - economy
    - land use and value
    - recreation and tourism
    - human health
- Cultural and Heritage Resources
- Other Undertaking in the Area
- Effects of the Undertaking on the Environment
- "This section should present an evaluation and summary of the benefits and drawbacks to the environment, including the VECs during the construction, operation, decommissioning and reclamation stages of the undertaking."
- Effects of the Environment on the Undertaking
- Other Approvals Required

287. The "Guide to Preparing an EA Registration Document" also references the "Nova Scotia Department of the Environment Pit and Quarry Guidelines, Revised May 1999".

"Nova Scotia Department of the Environment Pit and Quarry Guidelines, Revised May 1999"

288. The Pit and Quarry Guidelines[176] also establish key site location and operational parameters that all quarries must meet. These include:

- separation distances for quarry operations: The minimum setback for the operation of a quarry is 30 meters from a highway or the bank of a water course, as well as 30 meters from the boundary of the property on which the quarry is located [section (iv)]

[176] See exhibit **R-74**.

- no blasting for a quarry is permitted within 30 meters of the boundary of a highway or the bank of any water course or within 800 meters of the foundation or base of a structure located offsite or within 15 meters of the property boundary when a structure on the abutting property is not involved

- requirements in regard to liquid effluent discharge levels, suspended particulate levels, sound level limits and blasting, including maximum permitted emission parameters, sound level limits, concussion, air blast limits, ground vibration limits and hours in which blasting is prohibited

- requirements to ensure rehabilitation of quarries, including the requirement to prepare a rehabilitation plan and posting security to ensure that the rehabilitation is carried out

- requirements for "protection of ground water resources" and that "prior to any excavation below the water table, a hydrological study will be required and approval must be obtained from the Minister or Administrator"

289. I attach as **Appendix A** to this Report, EA Registration Documents Tables of Content for three quarry projects listed in Appendix C to my March 2017 Expert Report. Reference to these Tables of Content indicates how these Registration Documents are, indeed, following the guidance provided in the Government of Nova Scotia's publications, regulations and policy documents referred to above as to the type of information that is required for review in a standard Nova Scotia EA Class 1 review and approval process. There is considerable similarity to the types of information provided due to the standardized requirements of the Nova Scotia EA review and approval process.

290. The standardized EA process referenced by Mr. Geddes is further outlined in another document entitled "A Proponent's Guide to Environmental Assessment".

"A Proponent's Guide to Environmental Assessment"

291. The Proponent's Guide further confirms the Nova Scotia government's objective to have an EA approval process that will facilitate EA reviews and approvals. For example, it states that Nova Scotia has developed a "one window" process to "streamline the review process for government and proponents of mining developments". (emphasis added)

292. The Nova Scotia EA process allows the proponent to "meet with the Department of Natural Resources and the Department of Environment and Labour during the project planning stage to discuss the undertaking and what both departments require from the proponent, including other approvals". [page 9]

293. A "Registration Document" is required for a Class 1 undertaking and the requirements for that Registration Document are set out in the Guide. The Guide again helps proponents clearly understand the standard type information that should be submitted to gain EA approval for a Class 1 undertaking.

294. The Proponent's Guide states that "the Minister must consider the following information when making a decision:

- the location of the proposed undertaking and the nature and sensitivity of the surrounding area;
- the size and scope of the proposed undertaking;
- concerns expressed by the public about the adverse effects or the environmental effects of the proposed undertaking;
- steps taken by the proponent to address environmental concerns expressed by the public;
- potential and known adverse effects or environmental effects of the technology to be used in the proposed undertaking;
- project schedules, where applicable;
- planned or existing land use in the area of the undertaking;
- other undertakings in the area; and
- such other information as the Minister may require." [page 11]

295. The Guide also indicates other types of information that the proponent should consider providing with its Registration Document, including to "describe all measures that will be used to avoid or mitigate any negative effects and maximize any positive effects of an undertaking". [page 13]

296. The Minister is empowered to seek additional information from the proponent when the registration information is insufficient to allow the Minister to make a decision.

297. The Proponent's Guide indicates that, typically, a government review of a Class 1 environmental assessment takes 25 calendar days of process time to complete. It notes, however, that the time may be extended if the Minister decides more information or further documentation is required and could also vary with the complexity of the undertaking. [page 14]

298. There is the potential for the Minister to decide that an Environmental Assessment Report is required "when a review of the registration information indicates that several aspects of the proposed project are unresolved, and those aspects may cause significant environmental effects or adverse effects". [page 21]

299. If the Minister does decide that an Environmental Assessment Report is required, the EA branch will prepare and release a proposed terms of reference for public review along with the Registration Document. After receipt of comments, the proponent will have an

opportunity to reply to the government prior to it preparing the "final terms of reference" for the EA. Following receipt of the final terms of reference, the proponent will have up to two years to prepare and submit the report to the EA branch. Once the EA report has been accepted by the EA branch (*e.g.*, determining whether it does or does not meet the terms of reference), the Minister has the option to refer the EA report to the Environmental Assessment Board for review or, if not referred, the EA branch must notify the public of the review period for the report in order to solicit comments from members of the public, various interest groups, and First Nations, and then a report will be prepared regarding such comments with a recommendation to the Minister. [page 21]

300. It is important for this Arbitration Tribunal to note that, under the NSEA, prior to the WPQ, no applications for EA approval of a quarry, mine or similar type project in Nova Scotia had ever been required to prepare an Environmental Assessment Report, Rather, all such applications were processed based on the Nova Scotia Department of Environment standard EA application practice, as outlined in the Guides described above.

301. This standard practice is essentially to require only a Registration Document (with technical supporting studies, and occasionally with the proponent preparing a "focus report" in respect of a specific issue) and the review of that paperwork by government EA reviewers, who consider the material submitted by the proponent and any comments received from government officials, as well as the public, in respect of the proposed project. The standard process for quarries has, to date, never included the preparation of a more formal Environmental Assessment Report and has never involved the referral of such a project to the Environmental Assessment Board for a panel review.[177]

302. As Mr. Geddes affirms in his witness statement, after the required documentation has been prepared, NS Environment Department staff assemble all comments into a report and prepare departmental analysis and a recommendation for the Minister, following which the Minister makes a decision.[178]

303. The Proponent's Guide indicates that the process for the Minister's decision in respect of a Class 1 undertaking is straightforward:

> "The Minister may grant an approval when a review of the information indicates that there are no adverse effects or significant environmental effects which may be caused by the undertaking or that such effects are mitigatable. The undertaking will

[177] I note, however, because of a Federal-Nova Scotia agreement pertaining to BPQ, the CEA Agency prepared an EAR for this project.

[178] Geddes Report, para. 3.

be approved subject to specified terms and conditions and any other approvals required by statute or regulation."

304. The approvability prognostications of Ms. Griffiths and Dr. Blouin have no regard to this standard EA process. And indeed, they profess no experience with that standard process used for every other quarry approval in Nova Scotia under the NSEA. This helps to clarify why their prognostication of approvability issues based on a panel review perspective is essentially irrelevant to consideration of approvability of quarry projects in Nova Scotia.

305. In my March 2017 Expert Report, Appendix C provides a chart listing 50 EA applications made under the NSEA between 2000 and 2016 for quarries, mines and sandpits, and marine terminals. In summary:

- this chart shows that during this time period, Nova Scotia's standard EA practice was to approve each and all of the complete EA applications for such projects;
- in no case other than in Keltic and Highway 104 was any proponent required to prepare an Environmental Assessment report, but rather project applications were processed on the basis of the standard practice Registration Document and supporting studies;
- in each case the EA approval was given by the Minister in the manner that the Proponent's Guide indicates would be the case (*i.e.*, "the undertaking will be approved subject to specified terms and conditions and any other approvals required by statute or regulation"); and
- a comparison of the terms and conditions imposed on a number of these quarries substantiates that the terms and conditions are relatively (but not completely) standardized in that these are a type of project that can be regarded as a "class" of projects in respect of which the typical impacts are well understood and the typical mitigation measures for dealing with such impacts are also well understood.

306. In my opinion, the Nova Scotia standard EA process is a sensible one that recognizes that environmental assessment is undertaken at a project's preliminary stage and that unanswered questions and other issues of that nature should not mean EA approval is denied, but rather that EA approval is granted, subject to a number of often detailed terms and conditions. Such a process is far from unique in Canada.

307. To recognize that there is a standard EA review process and an approval process for quarries in Nova Scotia is to recognize the reality of the situation.

308. In reviewing quarry EA applications, Nova Scotia Environmental Assessment personnel regard quarries as, in effect, a class of projects that have similar attributes, similar potential impacts and similar means of mitigating these impacts. Without there being this degree of commonality in these matters, Nova Scotia could not have rationally published guides to preparing an EA registration document for pit and quarry development in Nova Scotia.

309. The use of a class approach to consider and approve EA's is not unusual. Ms. Griffiths herself recognised that mining projects have many similar attributes. In her decision to approve a nickel mine as Chairperson of the Voisey's Bay Mine Environmental Assessment Panel, she writes:

> "The Panel concludes that, in many respects, the Project is a relatively conventional mining operation using proven mitigation measures, and that its effects can be predicted with reasonable certainty."[179]

> "The Panel concludes that VBNC could construct, operate and decommission the Project without either significantly damaging local and regional ecosystem functions, or reducing the capacity of renewable resources to support present and future generations."[180]

310. A nickel mine involves far more significant environmental risks than an aggregate quarry and yet Ms. Griffiths was willing to recognize that there are "proven mitigation measures" for mines and a mine's "effects can be predicted with reasonable certainty".

311. Dr. Blouin and Ms. Griffiths have ignored the practical reality of quarry EA approval practice in Nova Scotia. They have premised their speculations about the factors for approvability on the assumption that these matters would come before another panel for review. Even if they did, if these witnesses had actually discussed the approach which they themselves have used on EA projects that had significant uncertainties and other issues, they would know very well that their own practices, as well as those of other panel reviewers, is generally to seek to allow approval of the EA, recognizing that there are many opportunities to ensure that uncertainties and further assessment issues can be addressed in the permitting and licensing process through the imposition of terms and conditions.

312. Another factor that I believe makes their opinions on approvability unreliable is that their lack of experience with the standard Nova Scotia process has blinkered any regard by them for the important role of standard terms and conditions in quarry EA approvals.

313. As can be seen from a review of the types of terms and conditions used for quarries (see the 2015 approval issued to Irish Cove Quarry Expansion, found in Appendix B to this Report, and terms and conditions for other quarry approvals found in Appendices L-N to my First Expert Report), these can require further studies, with results being required to be presented to government agencies, so they can determine their adequacy and reliability; requirements for the proponent to then develop plans to implement the results of those studies; requirements for the proponent to further consult with specialist government

[179] Voisey's Bay Report, p.19 **(R-443)**.

[180] Voisey's Bay Report, p.19 **(R-443)**.

departments, on issues such as wetland compensation, fisheries, wildlife and endangered species, in order to arrive at procedures and actions that are satisfactory to these agencies before the proponent applies for or obtain project-specific licenses for operations required under Part V of the NSEA.

314. A recent example of the use of terms and conditions in the standard process is the 2015 EA approval issued to **Irish Cove Quarry Expansion** which included the following items:

> 1. General Approval
>
> (i) a requirement to implement all mitigation and commitments in the Registration Document unless approved otherwise by Nova Scotia Environment.
>
> 2. Surface Water Resources
>
> (i) prohibiting the proponent from undertaking any project-related activities within 30 meters of a wetland or watercourse, unless otherwise approved by NSE and no development or removal of vegetation within that 30-metre buffer unless otherwise permitted.
>
> (ii) that the Approval Holder must, as part of the application for amendments to the Part V Approval under the *Environment Act*, submit to NSE for review and approval:
>
> a) a surface water monitoring plan and, based on the results, the Approval Holder must make necessary modifications to mitigation plans and/or operations, as required by NSE;
>
> b) an erosion and sediment control plan;
>
> c) a stormwater management plan, including design criteria recognizing increased likelihood of more intense precipitation events in coming decades; and
>
> d) that all surface water protection and management plans must be updated/revised to reflect the progressive development of the quarry.
>
> 3. Ground Water Resources
>
> (i) The Approval Holder, as part of the application for amendments to the Part V of the Approval under the *Environment Act*, must submit to NSE for review and approval:
>
> a) a groundwater monitoring program . . . designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results . . . the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE; and
>
> b) at the request of NSE, a monitoring program to determine the potential for and extent of sulphide-bearing material and plans to manage any exposed acid-generating material and associated drainage (in consultation with NSE).

(ii) The Approval Holder must not excavate below the water table, unless otherwise approved by NSE;

(iii) The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of project operations to the satisfaction of NSE.

5. Protected Area

(i) the Approval Holder is prohibited from undertaking any project-related activities within 30 meters of the western side of the project boundary, unless otherwise approved by NSE and the 30-metre buffer strip must be maintained as forest.

(ii) the Approval Holder must make efforts to re-vegetate the already-disturbed berm area.

6. Noise and Dust

(i) The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must provide for review and approval, an updated blasting plan. The plan must include an updated pre-blast survey for structures and water supplies within 800 meters of the blast area, a detailed blast monitoring plan, and a full blast damage response policy, as required by NSE.

(ii) At the request of NSE, the Approval Holder must develop and implement an air quality and/or dust monitoring plan . . . based on the results of the monitoring programs, as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations, as required by NSE.

(iii) At the request of NSE, the Approval Holder must monitor noise levels. Based on the results of the monitoring program, as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations, as required by NSE.

8. Archeological and Heritage Resources [details omitted]

9. Public Engagement

(i) At the request of NSE, the Approval Holder must develop and submit to NSE, a complaint resolution program to address public concerns associated with the undertaking. The complaint resolution program must include, but not be limited to, the appointment of a contact person designated to deal with concerns from the public.

(ii) At the request of NSE, the Approval Holder must form a Community Liaison Committee (CLC). The NSE Guidelines for the formation of a Community Liaison Committee should be used for guidance. The Approval Holder must operate the CLC for the duration of the undertaking and until released in writing by NSE.

10. First Nation and Aboriginal Engagement [details omitted]

11. Contingency Plans

(i) The Approval Holder, as part of the application for amendments to the Part V Approval . . . must submit to NSE, for review and approval, a contingency plan that

meets NSE's Contingency Planning Guidelines and addresses (including but not limited to):

a) accidental occurrences;

b) training to be delivered to staff, including contractors;

c) procedures for responding to incidents during times when the facility is not staffed;

d) impacts to watercourses and water resources and domestic water supplies;

e) releases of dangerous goods or waste dangerous goods;

f) potential fire at the facility;

g) petroleum and hazardous material spills and surface water control structure failure; and

h) such other information as required by NSE.

(ii) Contingency plans must be updated/revised to reflect the progressive development of the project. This is to take place over the lifetime of the project, at a schedule acceptable to NSE, and revised as approved by NSE.

12. Project Development and Reclamation

(i) Quarry expansion approval is subject to progressive reclamation at the existing site being completed to the satisfaction of NSE. . . .

315. The **Irish Cove Quarry Expansion Terms and Conditions** that are an essential part of the Environmental Assessment Approval **are Appendix B** to this Reply Expert Report.

316. In **Appendix D** to my March 2017 Expert Report, "Comparison of Valued Environmental Components", we demonstrated that there are many important similarities as to how proponents of four quarry and marine terminal projects prepared information for environmental assessment approval. In particular **Appendix D** shows a similarity with respect to four quarry and marine terminal projects, as well as the Tiverton Harbour Development, in respect of the following key environmental assessment factors:

- valued environmental components (VECs)
- potential environmental effects
- residual environmental effects after mitigation

317. At paragraph 111 of my March 2017 Expert Report, I indicated that in examining the issue of the similarity of Bilcon's environmental impact statement approach to that of other quarries and marine terminals, I looked at the following factors:

- whether similar VECs were considered for each project

- whether similar potential environmental effects were identified for each project and how they were addressed
- whether the mitigation measures proposed were similar
- whether the terms and conditions imposed dealt with issues that the WPQ EIS had anticipated and in respect of which Bilcon had made commitments to act on
- whether issues raised by the public and indigenous groups in other matters were similar to those raised in WPQ and whether consideration of those issues have been addressed by means such as compliance with federal/provincial regulations and guidelines or mitigation measures identified by such approval authorities

318. Based on my analysis, I concluded that the various aspects of comparison were generally similar, *i.e.*, the answer to these questions is “Yes”.

319. These findings support my opinion that the WPQ project was approvable, and would be approved, if standard federal and Nova Scotia environmental assessment evaluation criteria and practices had been fairly and objectively applied to the project; and that there was and remains no reasonable basis for Canada and Nova Scotia to deny EA approval of the WPQ.

320. For quarries and marine terminals, assuming proponents have studies prepared that address issues that typically need to be addressed in these kinds of projects, and assuming the studies submitted include reference to the use of mitigation measures that have been accepted in the past, the probability of the proponent obtaining EA approval is extremely high. Indeed, based on the last 16 years, approval is a virtual certainty in Nova Scotia, assuming the project is of the same type as the other projects previously approved.

321. Neither Ms. Griffiths nor Dr. Blouin have identified any unique, distinguishing aspect or factor about the WPQ that would place it in a different category than the typical quarries and mines that have consistently received EA approval in Nova Scotia.

322. Moreover, they have ignored their own experience as review panel chairs in not recommending against EA applications because of missing information or uncertain results, as they have overcome these issues by recommending terms and conditions. In casting doubts on the approvability of the WPQ, they simply have ignored their previous experiences and practice.

323. Considering all of these factors, there is no objectively rational reason to conclude that WPQ would not had been approved, if it had been treated in a manner similar to all other projects of its type and class that did receive approval.

THE GRIFFITHS AND BLOUIN PROGNOSTICATIONS AS TO APPROVABILITY CHALLENGES FOR WPQ COMPARED TO THEIR PRACTICE AS REVIEW PANEL CHAIRS

324. Even assuming a review panel approach to approvability could be considered appropriate, Ms. Griffiths and Dr. Blouin have not considered and applied the usual panel review practice. They do not consider that the project would receive EA approval if standard EA review and approval practices were used, including the mitigation measures that are normally applied in similar approved projects.

325. There is a standard panel review CEAA and Nova Scotia practice regarding panel-identified potential project effect uncertainties, missing information, and with respect to various critiques of a project that may arise during a panel hearing. That standard practice has arisen in response to the fact that as an environmental assessment "must be conducted as early as practicable in the planning stages of a project"[181]; uncertainties are often inherent at the time of EA evaluation.

326. Ms. Griffiths and Dr. Blouin are fully aware of what constitutes standard EA panel review practice in Canada. In that standard approach, uncertainties in information or even as to environmental effects are anticipated, and not regarded as fatal flaws, given the fundamental role of EA as a planning tool.

327. As this Tribunal has observed:

> "The case law in Canada has affirmed that environmental assessment "must be conducted as early as practicable in the planning stages of a project. **By its very nature, the proceedings are subject to some uncertainty"**. Project details may evolve during and after a Panel hearing. "Since projects are submitted for environmental assessment at an early stage of their development, final determination of an amendment to project design and construction will continue well beyond the assessment stage."[182]

328. Standard practice recognizes that in determining the EA acceptability of the project, it is appropriate for a review panel to assume that most terms and conditions recommended by a review panel would be imposed by government decision makers in order to ensure, where important, relevant further information, studies, management plans, further mitigation measures, etc. are developed and, where appropriate, approved by government departments before the project is given final construction approval.

329. As this Tribunal further observed:

> Given the early role of the environmental assessment process, environmental assessment panels in many cases attach conditions that will be enforced by licensing

[181] CEAA, s. 11(1).

[182] Award, para. 549 (emphasis added).

> authorities, some of them cast in general terms that identify a goal or standard, rather than providing exhaustive detail as to how to achieve it.[183]

330. Terms and conditions could typically require the following: additional information; further and better specific studies; identification of further or different mitigation measures arising from those studies; that the proponent enter into discussions with expert government departments on implementing mitigation measures; requirements for monitoring, as well as for obtaining approval of detailed operating plans and if necessary revisions of operating plans from line government regulators; requiring further consultation by the proponent with sectors such as the fishing industry to better mitigate impacts on such sectors or to establish mechanisms for compensating them for negative impacts, etc. These are just some of the many types of terms and conditions that Nova Scotia has included in EA quarry approvals between 2000-2016 as well as in other projects.

331. Ms. Griffiths and Dr. Blouin are experienced CEAA and NSEA panel chairs who have direct experience in recommending that even unique and complex projects receive EA approval, relying on terms and conditions to address concerns as to uncertainties.

332. As is detailed below, they have used that standard practice when they encountered uncertainties and missing information as chairs of their respective review panels for two major and complex projects in Nova Scotia, one of which was proposed by Canada and Nova Scotia and the other was a large new petrochemical and marine terminal facility that was forecast to provide a major boost to the local and regional economy. For these projects, these witnesses, then acting as respective panel review chairs for each project, recognized that significant uncertainties were apparent in the environmental impact studies under review, but they nevertheless recommended approval of those projects, assuming that, based on their recommendations, government decision makers would impose terms and conditions to deal with these matters.

333. However, in this matter, where they have been asked to prepare expert reports for these same governments who oppose the Bilcon project, these witnesses have not considered the use of that standard practice before arriving at their conclusions that doubt WPQ approvability.

334. I find it puzzling that in providing expert opinions for Canada in this matter, Ms. Griffiths and Dr. Blouin did not consider how terms and conditions used in similar projects did address such concerns. And they have not explained why such terms and conditions could not be reasonably used to resolve their concerns about the WPQ project.

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[183] *Ibid.*

335. Indeed, Dr. Blouin's witness statement does not even mention the words "terms and conditions".

336. While Ms. Griffiths does use the terms in two different contexts,[184] she omits any reference to terms and conditions or regulatory measures that have been accepted and applied by Canada and Nova Scotia in other EA approvals for comparator projects and fails to advise why they would not be sufficient for the WPQ project.

337. In my 2011 Expert Report, I referred to other JRPs reviewing EAs for large projects in Nova Scotia that understood the important role of recommendations to allow EA approval of projects despite the typical uncertainties. These JRPs made recommendations to approve the EAs and project approvals despite large data gaps and uncertainties, by making their recommendations conditional on the proponent being required to comply with the extensive and detailed terms and conditions, including that further studies or detailed plans be prepared prior to the construction phase as well as the terms and conditions that would be part of the operational approvals and licences.

338. It is instructive to examine the recommendations made in respect of two projects that had been referred to a Joint Panel Review assessment under the CEAA and Nova Scotia regimes prior to the WPQ project.

Sydney Tar Ponds Coke Ovens Remediation Project – Ms. Griffiths as JRP Chair Relied On Terms And Conditions To Avoid A Finding Of SAEE

339. In this phase of the Arbitration Tribunal's hearing, Ms. Griffiths, repeatedly states that the WPQ would likely lead to SAEE due to "uncertainty". For example, regarding the effects of the Whites Point Project on American lobster, she states:

> Based my review of the environmental assessment record, I am of the opinion a review panel could have reasonably concluded that the Whites Point project would have a likely significant adverse environmental effect on American lobster and lobster habitat because of the uncertainty around blasting effects, the high potential for invasive species to be introduced via shipping, and the potential for habitat damage through sediment and chemical releases.[185]

[184] She first uses it in paragraph 23 where she mentions that a review panel may consider the use of terms and conditions as a means of obtaining "needed information missing from the record" in the context of her summary of CEAA s. 34. Her second reference is in paragraph 60, where she observes the WPQ JRP did not "complete its determination" "that certain terms and conditions should be applied in order to ensure the residual adverse effects would not be significant".

[185] Griffiths Report, at p. 63.

340. Similarly, in her prognostication about the WPQ's effects on the North Atlantic right whale, she reiterates her belief that uncertainty about blasting effects and the absence of effective mitigation as well as increased risk of ship strikes should result in a finding of a SAEE:

> I conclude, based on the information available in the environmental assessment record, that a review panel could have reasonably found that the Whites Point project would have a likely significant adverse environmental effect on the endangered North Atlantic right whale because of the uncertainty around blasting effects, the absence of effective mitigation, and the increase in risk of a lethal or sub-lethal shipping strike. Without an adequate cumulative effects assessment to prove otherwise, I am also of the opinion it would be reasonable to conclude that the Whites Point project would subject the North Atlantic right whale to increased risk of harm, which would act cumulatively with other risk factors to reduce the right whale's chances of recovery.[186]

341. Ms. Griffiths chaired the Joint Review Panel for the Sydney (Nova Scotia) Tar Ponds Coke Ovens Remediation Project. That review focussed on evaluating the potential for significant adverse environmental effects that could result from a novel proposed process for remediating highly hazardous wastes (including PCBs and dioxins) at a site located immediately adjacent to a residential area in the City of Sydney, Nova Scotia.[187]

342. Even though the Sydney Tar Ponds project had the potential for much more serious groundwater impacts than WPQ (due to the Tar Ponds' potential release of hazardous wastes), and even though significant technical information about various hazards was not available, the Panel nevertheless recommended that the Sydney Tar Ponds project move forward.[188]

343. In the Report's introduction, Ms. Griffiths' Panel acknowledged the inherent uncertainty in the review process, and stated that this inherent uncertainty was taken into consideration when developing recommendations:

> "During public hearings, the Sierra Club of Canada stated in its closing remarks: ". . . in our view, [the Panel] has not yet obtained the information necessary to complete its assessment." The Sierra Club of Canada also stated: ". . . environmental concerns about the methodologies proposed by the Tar Ponds Agency raised in this hearing are so significant that further technical hearings would be required."
>
> The Panel understands that under the Canadian Environmental Assessment Act, an environmental assessment of a project is to be conducted as early as is practicable in the planning stages of the Project and before irrevocable decisions are made. <u>The Panel recognizes that a balance must be struck between the information that is available during the planning stages of a project and the information that would be</u>

[186] Griffiths Report, at pp. 44-45 (emphasis added).

[187] Sydney Tar Panel Report, **(C-534)**.

[188] *Ibid.*, at p. 2.

> available immediately before and during the implementation of a project. The Project before the Panel is still in its planning stages.
>
> In submitting its report to the Minister of the Environment for Canada and the Nova Scotia Minister of Environment and Labour, the Panel is satisfied that it has gathered enough information to draw conclusions and make recommendations on the potential for the Project to result in significant adverse environmental effects.
>
> The Panel recognizes that there is uncertainty regarding the approach and methodology to be used by STPA in implementing many aspects of the Project. The Panel took this uncertainty into consideration when developing the conclusions and recommendations found in this report."[189]

344. The Sydney Tar Ponds JRP stated that its key finding that the project was unlikely to result in significant adverse environmental effects was premised on the belief that its recommendations would be implemented. These recommendations are attached as Appendix K to my first Expert Report.[190] They include the recommendations that the regulatory authorities not issue any approvals unless and until the proponent had developed detailed groundwater and surface water control measures (Recommendation #7) and that certain aspects of the project not be approved until a pilot study had been completed (Recommendation #13).

345. As stated by Ms. Griffiths' Sydney Tar Ponds Review Panel Report:

> "The Panel concludes that the Project and the technically and economically feasible means of carrying out the Project are unlikely to result in significant adverse environmental effects provided that the recommendations of the Panel are followed and implemented.
>
> 1. Recommendation to NSEL: The Panel recommends that the Nova Scotia Minister of Environment and Labour approve the undertaking subject to conditions which address the recommendations in this report."[191]

346. However, in respect of the WPQ, Ms. Griffiths appears to have abandoned her practice in using terms and conditions to facilitate recommending EA project approval. For example, in her comments on the WPQ project, Ms. Griffiths addressed the issue of surface water management, stating that she could not be convinced that issues relating to surface water management in connection with the WPQ could be addressed through more extensive ground water monitoring and a detailed surface water management plan under the Part V NSEA approval process. She is adamant that: the "panel is required to determine the environmental effects of the project, not to defer the task to some other body at some other

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[189] Sydney Tar Ponds Panel Report, pp. 12-13 [emphasis added] **(C-534)**

[190] Estrin First Expert Report, Appendix K: Sydney Tar Ponds Joint Review Panel 55 Recommendations **(C-534)**.

[191] Sydney Tar Ponds JRP Report, page 142 under heading "9 – Conclusions and Recommendations" **(C-534)**.

time"[192]. However, this adamant position is clearly inconsistent with how she dealt with similar issues as chair of the Sydney Tar Ponds JRP.

347. Throughout her STP Report, Ms. Griffiths' Panel identified several instances in which the proponent had not provided sufficient data. However, many of these uncertainties or informational shortcomings were addressed through use of recommendations to complete the required data collection and tasks at a later date.

348. For example, in its conclusions on air quality and health, the STP Panel noted that it was presented with insufficient information and data in order to predict the effects of the project on air quality and human health:

> The Panel has concluded that prior to final approvals for the remediation Project there is a need for additional information on predicted air quality. Given the acknowledged heterogeneity of the Tar Pond sediment and the limited scope of the August 2005 field program, the Panel believes further information is required on the relationship between solidification / stabilization and air quality. Due to the history of background air quality exceedances in the Project area, predictions that air quality parameters would approach significance levels, the need for more short-term exposure predictions, and the early design phase of the Project, the Panel believes that additional data is required on expected ambient air concentrations. The Panel also has recommendations on the Project's air monitoring program.[193]

349. These uncertainties as to potential air hazards were not however detrimental to her STP Panel recommending approval of the project. Rather, they were subsequently addressed in the recommendations that followed that section of the report. Specifically, the Panel recommended that the Proponent "re-evaluate the risk assessments":

> Recommendation #4: The Panel recommends that NSEL and PWGSC require STPA to calculate the total expected ambient air concentrations due to the combination of all Project-related emission sources and the existing pollutant levels in the local air shed. The results of this analysis may affect the ecological and human health risk assessments. NSEL and PWGSC should require STPA to re-evaluate the risk assessments and incorporate the results into the Project design and applications for regulatory approvals, as appropriate.[194]

350. Recommendation #6 also required the Proponent to design and implement an Air Monitoring and Follow-Up Program, taking into account several listed heads of information:

> Recommendation #6: The Panel recommends that NSEL and PWGSC require STPA (with the appropriate involvement of Environment Canada, Health Canada, the Medical Officer of Health, the Cape Breton District Health Authority, and the Project Community Liaison Committee) to design an Air Monitoring and Follow-up Program

[192] Griffiths Report, para. 147.

[193] Sydney Tar Ponds JRP Report, p. 50 (emphasis added) **(C-534)**.

[194] Sydney Tar Ponds JRP Report, p. 50 **(C-534)**.

for the Project. The program should be based on technically sound principles and procedures with special consideration given to:

- Incorporating the results of the proposed evaluation of the existing monitoring network, including an evaluation of the causes of and responses to recent air quality incidents at the Tar Ponds and Coke Ovens sites;
- Development of conservative, unambiguous and practical air quality monitoring criteria;
- Appropriate responses to exceedances of air quality monitoring criteria;
- The need for real-time data, early warning and early reporting of deteriorating air quality;
- The need for a public communication plan providing results and, if required, an indication of effects on public health;
- Monitoring of the PM2.5 and PM10 fractions of particulates;
- PCB monitoring near Tar Ponds excavations;
- Reporting real-time air quality exceedances at the perimeter of the sites or off-site to the Medical Officer of Health; and
- Periodically reporting back to the NSEL and PWGSC on the accuracy of the air quality predictions and the effectiveness of any measures taken to mitigate adverse air quality effects.[195]

351. In the STP Hearing, with respect to Groundwater and Surface Water Quality, Environment Canada expressed concerns about missing data and the need for groundwater modelling:

> Environment Canada advised the Panel that the interaction of surface waters with groundwater is a key consideration in the overall remediation approach, and that, while it is known that contaminants have found their way to the intermediate bedrock on the Coke Ovens site, relatively limited information is available on the lower bedrock units. Environment Canada further commented that a preliminary quantitative assessment of the proposed control measures would have been helpful in evaluating the Project. To address these concerns the department recommended that STPA conduct additional modelling and use the results in the final design of the Project's surface and groundwater control features.

352. In response to Environment Canada's comment, the Panel made extensive recommendations:

> Recommendation # 7: Groundwater and Surface Water Protection Design Requirements
>
> The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to:

[195] Sydney Tar Ponds Panel Report, p. 51 **(C-534)** (emphasis added).

- Incorporate hydrogeological modelling results into the final design of the groundwater and surface water control measures and the monitoring network;

- Provide detailed calculations of the volume of groundwater that could flow through the Coke Ovens site following surface water diversion and the installation of the underground barriers and the surface cap;

- Assess potential hydrostatic mounding that may be generated when groundwater flow encounters cut-off walls and address the impact of mounding, if required; and

- Define and model the flow pattern of both ground water intrusion from the Coke Oven site and infiltration of sea water from the harbour to identify the amount of water that could collect under the monolith, including seasonal changes.

Recommendation #8: Groundwater Monitoring Program

The Panel recommends that, prior to providing funds or issuing approvals to proceed with the Project, NSEL and PWGSC require STPA to develop a detailed groundwater monitoring program for the various Project areas, including the intermediate and deeper bedrock zones. The program should demonstrate:

- How the distribution and location of the water sampling wells would (a) detect the amount of water that would penetrate to the contaminated material through the cap and as a result of the modified groundwater flow regime, and (b) identify potential underground flows of contamination from the Coke Ovens site; and

- How the flow of leachate from the municipal landfill site would be monitored and mitigated.

Recommendation # 9: Cap Design

The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to:

- Develop scientific and engineering criteria to design the Tar Ponds cap, including thickness and hydraulic conductivity criteria for the various layers; and

- Describe how the final design and implementation of both Tar Ponds and Coke Ovens site caps would respond potential problems such as exposure to repeated freeze / thaw cycles, non-aqueous phase layer (NAPL) migration, generation and migration of gas under the capping layer, erosion, and fissures.

Recommendation # 10: Cap Monitoring Program

The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to develop a cap monitoring program with an aim to:

- Ensure that the physical integrity of the caps at the Tar Ponds and Coke Ovens sites can be effectively managed;
- Assess the integrity of the monolith structure within saline conditions; and
- Assess the permeability of the monolith cap under freeze / thaw conditions.

353. On the same topic of groundwater concerns, the panel stated, "work is still needed," and provided suggestions for development of performance criteria:

> The Panel concludes that, similar to the Tar Cell scenario, work is still needed to prove the suitability of solidification / stabilization technology for the Tar Ponds setting before proceeding to full application. The Panel believes that a first step would be for regulators in consultation with STPA to establish performance criteria for compressive strength, permeability and stabilization. The Panel believes that the performance criteria for stabilization should either be set at or very close to the status quo currently found in the Tar Pond sediments in-situ – in other words, solidification / stabilization treatment should not significantly destabilize contaminants, especially if STPA still asserts that eventually the remediation Project would achieve "walk away" status. The Panel also believes this to be particularly important if STPA decides to proceed with full containment, including PCB sediments greater than 50 mg/kg.[196]

354. Following this conclusion, the Panel provided three separate recommendations intended to remedy the apparent lack of performance criteria. Recommendation #11 was directed at development of Solidification and Stabilization Criteria, Recommendation #12 involved development of a Treatability Study and Recommendation #13 required development of a Pilot Scale Study:

> Recommendation #11: The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to:
>
> - Develop criteria for the solidification / stabilization process to be used for treating the North Tar Pond sediment, South Tar Pond sediment, incinerator bottom ash, Tar Cell materials and Coke Ovens Brook sediments;
> - As part of criteria development establish site-specific leachate criteria for PAHs and PCBs and data quality objectives to demonstrate that remedial activities would not significantly increase contaminant mobility; and
> - Provide the results of the above to Environment Canada and NSEL for review and comment.[197]
>
> Recommendation # 12: Treatability Study

[196] Sydney Tar Ponds Panel Report, p. 58 **(C-534)** (emphasis added).

[197] Sydney Tar Ponds Panel Report, p. 59 **(C-534)** (emphasis added).

The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to:

- Assess the heterogeneity of Tar Ponds sediments and Tar Cell materials for characteristics relevant to solidification / stabilization;
- Use the results of the above to conduct a laboratory solidification / stabilization treatability study on the South Tar Ponds sediment;
- Based on the laboratory results develop interim specifications on the solidification / stabilization treatment formula (additives and dosage rates) to be used for the North and South Tar Ponds and Tar Cell; and
- Provide the results of the above to Environment Canada and NSEL for review and comment.

Recommendation # 13: Pilot Scale Study

The Panel recommends that, prior to providing funds or issuing approvals to proceed with solidification / stabilization, NSEL and PWGSC require STPA to:

- Conduct a pilot in-situ study on both ponds including site specific solidification / stabilization process;
- The evaluation should include use of the treatment formula specifications developed above and use of at least one type of construction technique proposed for full-scale application; and
- Conduct a sampling and testing program of the S / S products over time where samples of the in place product are collected and tested to determine compliance with the pre-established criteria; and
- Provide the results of the above to Environment Canada and NSEL for review and comment.

355. In the STP Panel Review, it was clear from the JRP's comments about uncertainties related to the Proponent's information and the JPR's subsequent recommendations to address these uncertainties through terms and conditions, that Ms. Griffiths, as a chair of that panel, understood that uncertainty is an accepted and inherent component of the review process. As JRP Chair, Ms. Griffiths acknowledged the important role of and extensively used terms and conditions to overcome these uncertainties. In fact, her panel made 55 recommendations to the government proponents which were essential to her panel's recommendation that the STP project proceed.[198]

356. But by Ms. Griffiths insisting that this type of detail that is normally provided only in a Part V NSEA project license process must be available for a review panel dealing with EA approvability, as she insists in her expert report, Ms. Griffiths is contradicting the approach

[198] The 55 STP Panel recommendations are found as Appendix K to my First Expert Report.

she used in STP to overcome uncertainties. She clearly recognized as chair of the STP JRP that a panel cannot be expected to have or to resolve issues that may be of concern that will happen later. The Sydney Tar Ponds Panel Report included no fewer than 55 recommendations, many of which included several components.[199]

357. She also does not reference or consider in her expert report that it is standard NSEA practice that terms and conditions are attached to all EA approvals to deal with uncertainties and missing information. For example, see **Table 2** further in this Report in which essentially standard terms and conditions are used in respect of uncertainties and other issues with respect to groundwater in proposed quarries.

358. In essence, in her expert report, she did not acknowledge that which she, as an experienced EA practitioner, knows to be fundamental – that that environmental assessment is an iterative process which cannot and is not intended to provide complete information detailing all aspects of a particular project. Some measures are best left to be resolved at a later stage when licensing conditions are imposed, since these are technical issues with which the scientists and engineers who work with government agencies are better equipped to review and to stipulate required mitigation measures and further studies. In fact, not recognizing this in her expert report directly contradicts her evident recognition of this practice, and her reliance on this practice in her Sydney Tar Ponds Panel approval recommendations.

359. Contrary to her expert report, both the theory and practice of environmental assessments in Nova Scotia anticipate that such matters can and will be addressed later in the process by terms and conditions of environmental assessment approval.

360. Nova Scotia officials testified in front of the WPQ JRP that at the environmental assessment stage the information provided in an EA need only demonstrate that conceptually the project was capable of meeting the requisite standards of technical approval. Although the JRP was clearly told that the submission of detailed engineering drawings of key features of the site and plans were appropriately addressed under the Part V industrial approvals process, Ms. Griffiths omits any reference to these comments. The statements of these officials, excerpted from JRP hearing transcripts, are found in this report at paragraphs 437-446.

The Voisey's Bay CEAA Panel Review – Ms. Griffiths' Approach as Chair

361. In 1996, the Voisey's Bay Nickel Company proposed a project to mine approximately 150 million tonnes of nickel, copper and cobalt ores from a site in Labrador. The Project was also to include processing the ore on site to produce concentrates. In January 1997, the provincial

[199] Sydney Tar Ponds Panel Report, pp. 142-151 **(C-534)**.

and federal governments, the Labrador Inuit Association and the Innu Nation signed a Memorandum of Understanding to establish a review panel for the project. The review panel was appointed, and was chaired by Ms. Griffiths.

362. As Chair of the Voisey's Bay Panel, Ms. Griffiths again took the approach that uncertainty could be resolved through additional studies undertaken by the proponent and government and that with terms and conditions in place, these projects should receive EA acceptance to allow them to proceed.

363. In its Report, the Voisey's Bay Review Panel referenced aspects of the Project that left an air of uncertainty following the planning undertaken by the Proponent. On some occasions, the Panel expressed a concern that sufficient uncertainty existed such that the Project should not proceed until all questions were resolved to the satisfaction of interested parties:

> However, the Panel believes that sufficient uncertainty remains about the effects of shipping through landfast ice that this component of the Project should not proceed until these questions have been resolved to the satisfaction of the Labrador Inuit Association (**LIA**) and government.[200]

364. Generally, uncertainties were dealt with by the Panel through recommendations for terms of approval that would require further study, data gathering, etc. Through this approach, Ms. Griffiths' Panel avoided recommending the Project not receive EA approval.

> Shipping
>
> There was considerable discussion about the need to ship in the winter months, based on production rates and VBNC's ability to store concentrates at the site for long periods. VBNC told the Panel that it would not take any ships through landfast ice for at least the first two to three years of the Project, and possibly longer. It also said that it would not ship through landfast ice if it could not do so safely. The Panel agrees with many presenters that there is still considerable uncertainty about the effects of icebreaking along the shipping route. The Panel has recommended that VBNC, before being allowed to ship through landfast ice, should
>
> - together with LIA and regulators, further investigate both the need to ship in the winter, and how breaking landfast ice would affect wildlife and the safety of ice users; and
> - negotiate a shipping agreement with LIA to address concerns about winter shipping and other issues.
>
> Seals, Whales and Polar Bears
>
> Shipping through landfast ice has not happened in this area before, and so there is also some uncertainty about how winter shipping would affect seals. The Panel has recommended that DFO carry out more regional studies on marine mammals to add

[200] CEAA, *Voisey's Bay Mine and Mill Environmental Assessment Panel Report*, (1997), Section 2.2 **(R-443)** (emphasis added).

> to the work already done by VBNC, and that VBNC and LIA determine whelping times for ringed seals in order to avoid affecting them at that sensitive time.[201]

365. There were many other uncertainty issues that arose in Voisey's Bay hearing. For example:

> Government and Public Concerns
>
> Recommendation 15
>
> Two issues appear uncertain, and require further examination. One is the potential for mercury mobilization and in particular under what circumstances acidification might occur at a level and scale which could increase it, and if it does, whether other factors might counteract this tendency. The other is the behaviour of metals in the marine environment and sediments, in particular whether they might become more bioavailable to marine organisms than VBNC has predicted. These matters should be considered on a continuing basis as part of the effects monitoring program, but they also require dedicated research.[202]

366. In Ms. Griffiths' expert report she raised concerns about sedimentation impacts on aquatic habitat.[203] A similar issue arose in her Voisey's Bay hearing. Notably, in that hearing, her panel had a number of recommendations to overcome those concerns:

> Recommendation 21
>
> The Panel recommends that VBNC and DFO jointly review all potential sources and pathways of sedimentation, and currently proposed mitigation with respect to Camp Pond, to avoid or minimize sediment transport into the pond wherever possible, so that fish habitat loss does not occur.
>
> Recommendation 29
>
> The Panel recommends that VBNC be required to include the following in its follow-up program:
>
> - a marine water and sediment quality monitoring program that includes threshold criteria related to existing water and sediment quality guidelines (threshold levels should be set at a point that gives suitable early warning);
> - mandatory mitigative action if these thresholds were exceeded; . . .

367. All told, the Voisey's Bay Panel provided 107 Recommendations.[204] It was explicit that, provided these Recommendations were followed, the Project would not cause serious harm:

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[201] CEAA, *Voisey's Bay Mine and Mill Environmental Assessment Panel Report*, (1997), pp. 4, 8 **(R-443)** (emphasis added).

[202] *Ibid.*, p. 54 **(R-351)** (emphasis added).

[203] Griffiths Report, at para. 148.

[204] Estrin Reply Expert Report, December 2012, Appendix F.

> "The Panel has very carefully reviewed all aspects of the Project and listened to the opinions of government, Aboriginal organizations and many other people. Based on this review, the Panel has made a number of recommendations about how the Project should be carried out. The Panel has concluded that, provided these recommendations are carried out, the Project would not seriously harm the natural environment, or country foods and people's ability to harvest them."[205]

368. The fact that Ms. Griffiths and Dr. Blouin prepared their opinions for this Tribunal that cast doubt on WPQ approvability without advising this Tribunal that they, as panel chairs in other projects that had similar or analogous issues, used standard EA review techniques that did not result in findings of SAEE, but rather resulted in their recommending those projects proceed, have caused me to doubt the reliability of their prognostications.

Sable Gas Project

369. The Sable Gas Project was a complex on-shore and off-shore undertaking that was assessed by a Canada-Nova Scotia Joint Review Panel. I previously referenced the Sable Gas JRP in my 2011 Expert Report. The Panel in the Sable Gas case issued 46 recommendations, many of them very detailed. These recommendations are attached as Appendix J to my 2011 report. For instance, Recommendation #1 sets out lengthy conditions that the authorities should include in any approval for the offshore pipeline component of the project. I include this recommendation to illustrate how the Sable Gas JRP was able to address its concerns about the lack of certain project details during the environmental assessment:

> RECOMMENDATION 1
>
> The Panel recommends the following conditions for any approval of the Offshore Pipeline that may be granted.
>
> The Proponents shall submit to the National Energy Board, for review, at least one hundred and eighty (180) days prior to the commencement of installation:
>
> (a) the pipeline design data and the final pipeline design, including, but not limited to:
>
> (i) the final Offshore Pipeline Design Basis Memorandum;
>
> (ii) detailed materials specifications;
>
> (iii) any relevant supporting design studies;
>
> (iv) limits of unacceptable spans found during installation, testing and operation, and mitigation measures to be used if an unacceptable span was to develop; and

[205] Voisey's Bay Joint Review Panel, *supra*, p. 2 **(R-443)**.

(v) construction schematics.

(b) a list of the regulations, standards, codes and specifications used in the design, construction and operation of the pipeline from the Thebaud platform to the Goldboro gas plant, indicating the date of issue;

(c) reports providing results and supporting data from any geotechnical field investigations for the evaluation of:

(i) the potential for slope instability;

(ii) the geotechnical and geological hazards and geothermal regimes which may be encountered during installation and operation of the facilities; and

(iii) the special designs and measures required to safeguard the pipeline.

(d) the pipeline route, detailed on appropriate scale maps, indicating all seabed, geotechnical and other features to a sufficient depth and resolution.

The Proponents shall not start any pipeline installation activity until the final pipeline design has been approved by the National Energy Board.

Unless the National Energy Board otherwise directs, the Proponents shall submit, at least thirty (30) days prior to the commencement of construction, a detailed construction schedule. The Proponents shall provide the National Energy Board and all other appropriate regulatory authorities with regular updates on the progress of construction activities and with any changes in the schedule as construction progresses.

The Proponents shall submit to the National Energy Board, for review, at least thirty (30) days prior to the commencement of construction, all construction manuals, including:

(a) a pipe laying and pipe trenching manual (including, but not limited to, other pipeline construction activities such as pipeline stabilization or anchoring);

(b) a construction safety manual (containing appropriate procedures for the reporting of any incidents to the NEB);

(c) a pipeline emergency response procedures manual; and

(d) all other manuals relevant to construction, installation and operation of the subsea gathering line from the Thebaud Platform to the Goldboro Gas Plant.

Unless the National Energy Board otherwise directs, the Proponents shall, during construction, for audit purposes, maintain at each construction site a copy of the welding procedures and non-destructive testing procedures used on the Project together with all supporting documentation.

The Proponents shall file with the National Energy Board, no later than one hundred and eighty (180) days after completion of the pipe laying, an as-laid pipeline survey report and maps.

The Proponents shall submit to the National Energy Board, for review, at least thirty (30) days prior to “Leave to Open”, an operation and maintenance manual including,

> but not limited to, inspection and remedial correction procedures for seabed movements causing spanning.
>
> If the National Energy Board determines that the pipeline design assumptions, relative to the pipeline burial, pipeline stability and seabed changes, cannot be confirmed, the Proponents shall submit to the National Energy Board, for review, at least one hundred and eighty (180) days prior to "Leave to Open", a pipeline in-place monitoring program. This program shall include all the inspection procedures and schedules, and criteria that will initiate specific inspection and remedial action procedures (such as storm conditions and limiting span lengths). This program will also identify all equipment required on-site or near-site for remedial action procedures, as well as any such equipment that has to be brought from remote locations. The program shall include the procedures for reporting incidents to the National Energy Board.
>
> The Certificate for the subsea pipeline facilities shall be issued to and held by Mobil Oil Canada Ltd. pending the establishment of the legal operating entity for SOEP. Upon establishment of that legal entity, the Proponents shall apply for permission to transfer the Certificate so that the pipeline facilities, in respect of which the Certificate is issued, shall be held and operated by that entity.
>
> The Panel recommends that unless the National Energy Board otherwise directs, any certificate issued should expire on 31 December 2000, unless the construction and installation of the offshore pipeline facilities has commenced by that date.

370. The detailed and prescriptive nature of the recommendations made by the Joint Review Panels in the two Nova Scotia projects, the Sydney Tar Ponds and Sable Gas as well as comments in the Voisey Bay Panel Review, demonstrate that panel members familiar with the CEAA and Nova Scotia EA processes, such as Ms. Griffiths, believed it to be appropriate to rely on terms and conditions to address serious concerns that arose during the EA without necessarily recommending that the proposed projects be denied for approval.

DR. BLOUIN'S APPROVABILITY PROGNOSTICATIONS FOR WPQ COMPARED TO HIS USE OF TERMS AND CONDITIONS AS CHAIR OF TWO NOVA SCOTIA ENVIRONMENTAL ASSESSMENT BOARD HEARINGS

371. Dr. Blouin, another expert witness provided by Canada in this phase of the Tribunal hearings, chose in his witness statement to highlight "The Importance of Information and Data provided by the Proponent" (paras. 29-32). He then proceeds to offer conclusions as to the alleged insufficiency of the Bilcon EIS and on that basis opines that a further panel review would result in findings of SAEE or adverse effects that were not made by the JRP.

372. It is surprising and perplexing that, in focusing on concerns about the alleged deficiencies and uncertainties in the information provided to the JRP by Bilcon, he failed to mention his experience as Chair of two Nova Scotia EA Review Panel hearings in which the evidence provided by the proponent presented similar problems. However, in those cases, as the Panel Chair, he determined that these issues could be appropriately addressed through his

terms and conditions, and on that basis he recommended the project obtain EA approval (which in fact occurred).

373. Dr. Blouin also did not refer to the consistent use of terms and conditions by the Nova Scotia Minister of Environment in all other Nova Scotia EA projects.

374. In paragraph 29 Dr. Blouin states:

> "The Nova Scotia EA process is predicated on an adequate information base to evaluate the potential effects of an undertaking. . . . Thus, in the Whites Point Project's harmonized review, it was incumbent on the Proponent to prepare an EIS that was responsive to the EIS Guidelines issued by the JRP."

375. In paragraph 31 he further states:

> "Where a Proponent is unable to provide requested information, or is unresponsive, or uncooperative in providing information to information requests, this may be factored into the Panel's recommendations to the Minister. . . . In my experience, a Review Panel is not required to propose mitigation measures in cases where a Proponent does not propose any, or proposes measures that the Review Panel judges to be insufficient."

376. He then states in paragraph 32 that such uncertainties justify recommending against the approval of a project "if there are potential adverse environmental effects or significant environmental effects that are uncertain or unacceptable":

> "Where a Proponent provides inadequate information, a Review Panel may also be left unable to determine whether or not certain environmental effects may occur, whether or not they are adverse or significant, or whether they could be adequately mitigated. In this scenario, I am of the opinion that a Panel would be within its mandate to recommend against the approval of a project if there are potential adverse effects or significant environmental effects that are uncertain and unacceptable."

377. Later in his Witness Statement Dr. Blouin refers to information provided by Bilcon to the JRP which it termed "inconsistent or inadequate" and to what he refers to as JRP- identified deficiencies (paragraphs 106-108 of his report). At paragraph 110, he then concludes on this subject as follows:

> "In my experience, inadequate or incomplete information has the effect of introducing uncertainty over the type, magnitude and significance of possible project impacts, and impairs the ability of a Panel, the public and government to make informed decisions on whether potential impacts can be mitigated. In such a scenario, a Panel could certainly recommend against approval of a project where potential adverse or significant environmental effects are uncertain or unacceptable."

378. It is noteworthy that Dr. Blouin has chosen to conclude on this topic with remarks that have the potential to suggest to this Tribunal that it should infer such negative findings would justify any panel to "recommend against approval of a project".

379. Although he has used a different approach to such uncertainties in other cases in order to approve government or government-favoured projects, he does not mention these cases.

Keltic LNG & Petrochemicals Project – Dr. Blouin as Chair of the EAB Panel Review

380. In particular, it is unfortunate Dr. Blouin has omitted the fact that he led a panel review that completed an EA evaluation of the proposed Keltic LNG and Petrochemicals Project, despite the proponent not having provided most of the relevant data or technical reports.

381. According to his Keltic Nova Scotia EAB report:

> "The proposed Keltic LNG and Petrochemicals project represents a scale and type of development which would be unique in Nova Scotia, and as would present significant challenges to regulatory agencies having jurisdiction over aspects of the project. . . . If the project proceeds, this undertaking would significantly alter the socio-economic and bio-physical environment of the proposed project location and surroundings. While some impacts would be positive (employment and investment), other impacts to the environment and on the rural surroundings and way of life would be negative."[206]

382. There were many similarities with respect to the potential environmental and social concerns that are shared by the Keltic and WPQ projects. What is remarkable, however, is that in the Keltic project, Dr. Blouin's Environmental Assessment Board Review Panel recommended approval of the project despite lacking a great deal of information relating to project design and construction and that "many questions had to be deferred to future studies and plans yet to be submitted". (emphasis added) Indeed, he found that "in many respects the EIA Report submitted by Keltic does not adequately address the Terms of Reference issued by the Nova Scotia Department of Environment and Labour (NSDEL)".

383. In Dr. Blouin's Keltic Panel's words:

> Much of the report and responses to specific questions often rely upon the standard response "will be determined during the FEED phase of the project." Therefore, limited information is available to the public and other government departments thus limiting the overall completeness of the review of the proposed project. It is understood though, that the EIA is part of the overall process of project development and that specific details and engineering information depends on the outcomes of each step of the process. [Page 71 under heading "5.6.4 Panel Findings"]
>
> All of the identified domestic drinking water wells within the Goldboro area lie in locations down-slope from at least portions of the Keltic LNG or petrochemical facility sites in terms of groundwater flow. This raises the concern over impacts of any spilled

[206] Report and recommendations to the Nova Scotia Minister of Environment and Labour, Nova Scotia Environmental Assessment Board full review of the Keltic Petrochemical's Inc. proposed LNG and Petrochemical plant facilities, Goldboro, Nova Scotia, Environmental Impact Assessment, Final Report (February 21, 2007), **(C-685**) p. 3 ("Keltic Panel Report") available at: http://www.gov.ns.ca/nse/ea/kelticpetro/KelticEABReport.pdf. The Keltic Panel Recommendations are also found in Appendix O to the First Estrin Expert Report (July 2011).

> or leaked substances from any of the proposed facilities that might enter the groundwater and migrate towards these wells.
>
> . . .
>
> There is a great deal of uncertainty expressed within the EIA Report regarding impacts on water wells, due to uncertainty in site design and sources, intervening overburden and geology, distance, age and type of well. Construction practices at the site may also determine degree of impacts, No discussion is provided on specific wells predicted to be at risk, or degree of risk. The prediction of minimal significant impact to groundwater is not justified with this level of uncertainty. The Proponent has responded that there will be no impact on quantity or quality, and then provided a discussion on the likelihood of impacts in dug vs. drilled wells, and the locations of each. Their conclusion is that impacts to local well water supplies generally are not expected to be significant (Keltic response to EAB-86). (Emphasis added)

384. In Keltic, Dr. Blouin recognized how important and valuable the terms and conditions can be in dealing with a problem such as not having full information at the time of consideration of an Environmental Assessment. Contrary to his position in his witness statement filed before this Tribunal, in the Keltic project he acknowledged that it is normally expected and should not be viewed as prejudicial to the proponent that such uncertainties existed in reaching a conclusion of EA approvability.

385. As he wrote as the Chair of the Nova Scotia EAB in the Keltic matter:

> "Environmental assessment is used as a planning tool at an early stage in the project development process. As such, it is typical that the information base relating to project design and construction will be incomplete."[207]

386. Yet in his expert report before this Tribunal, Dr. Blouin does not acknowledge what he clearly knew is typical for an EA and which, in the Keltic case did not prevent him from providing approval to that project.

387. In essence, Dr. Blouin's approach in the Keltic project is that he and his Panel were prepared to recommend the approval of the Keltic project despite inadequacies of information and analysis but on condition that a number of further studies and specific actions be taken.

388. In contrast, in his expert report before this Tribunal, Dr. Blouin has totally ignored the use of terms and conditions that could require other studies or specific measures to be taken. He concluded that WPQ would have unacceptable impacts – without considering that the project could be conditionally approved through terms and conditions that required specific and detailed mitigation or monitoring plans, further consultation, etc.

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[207] *Ibid.* (emphasis added).

389. In his witness statement before this Tribunal, Dr. Blouin asserts that the WPQ JRP found that there was a lack of baseline data, and accepts this as an important factor in concluding that the project would not merit EA approval if it were further considered by a review panel.

390. However, in Keltic, his Environmental Assessment Board Review Panel, while noting that more than 40 studies that the Proponent was required to provide for the review remained missing, and that there were "air emission errors, inconsistencies and omissions",[208] Dr. Blouin's panel nevertheless recommended project approval and commencement of construction – conditional on Keltic providing the required baseline data and studies before permits are issued: "The Panel requests that Table 9.6-1 of the EIA report be revised by the Proponent to address air emission errors, inconsistencies and omissions (see section 5.3.3 Identified Concerns/Pane/Emission Data, this report)."

391. Sections 6.2.1 and 6.2.3 of his Keltic Panel Report detail the very wide range of missing information and studies not available for his panel response:

> 6.2.1 Introduction
>
> Throughout the EIA Report, a number of further studies, reports and plans are listed which are to be prepared by the Proponent, but which were not available at the time of the EAB review of this project.
>
> 6.2.3 Identified Concerns
>
> **Following is the list of studies, reports and plans noted by the Panel which the Proponent has committed in their EIA Report to deliver**. The page number of the first noted occurrence of each item is provided. Page references (in brackets) are to the Keltic EIA Report as submitted to NSDEL. In addition, the Panel has recommended additional work which will be required, as noted below.
>
> - EPP – Environmental Protection Plan – Construction and Operation phases (2-44)
> - EHSS – Environmental Health, Safety and Security Plan (2-44)
> - Public Information and Communications Plan (2-44)
> - Spill Management Plan (2-47)
> - Emergency Response and Contingency Plan (2-47)
> - Waste Management Plan (2-48)
> - Water Management Plan (2-59)
> - Environmental Management Plan (2-71)
> - Environmental Compliance Monitoring Plan (2-72)
> - Environmental Effects Monitoring Plan (2-72)

[208] Keltic EAB Report, at 5.3.5.4 (c) **(C-685)**.

- Toxic-Hazardous Materials Management Plan (2-153)
- Air Quality Modeling Report (9-32)
- Noise Monitoring Program (9-63)
- Erosion and Sediment Control Plan (9-78)
- Stormwater Management Plan (9-78)
- Terrestrial Habitat Monitoring Program (9-88)
- EMP – Environmental Management Plan (9-97)
- Fishery Potential Effects Analysis (9-102)
- Fish Habitat Compensation Plan (with DFO) (9-111)
- Acid Generating Rock Management Plan (9-124)
- Archaeological Survey (Meadow Lake) (9-132)
- Dust Control Program (9-142)
- Erosion Control Program (9-142)
- Worker Health and Safety Program (9-142)
- Traffic Circulation Study (9-197)
- Traffic Infrastructure Study (9-197)
- EMS – Environmental Management Systems (10-1)
- Predicted Noise Level Modeling (10-10)
- Watershed Protection Strategy (10-15)
- Aquaculture Compensation Agreement (10-24)
- HAZOP Studies (10-43)
- Wetland Compensation Plan (11-1)
- Tailings Management Plan (Added by Panel)
- Incinerator Monitoring Plan (Added by Panel)
- Light Monitoring Plan (Added by Panel)
- Marine Water and Sediment Monitoring Program (Added by Panel)
- Receiving Water Assimilative Capacity Study (Added by Panel)
- Archaeological Response Plan (Added by Panel)
- Traffic Impact Study (Added by Panel)
- Fisheries Income Compensation Plan (Added by Panel)
- Aquaculture Income Compensation Plan (Added by Panel)
- Visitation Plan (Red Head Cemetery) (Added by Panel)
- Lighting Design Plan (Added by Panel)
- Groundwater Protection, Monitoring and Contingency Plans
- requested by NSDEL (Added by Panel)
- (the Proponent mentions a groundwater monitoring program) (9-82)

392. Dr. Blouin's Keltic Panel report then states:

> **Review of the EIA Report was made more difficult by the fact that so many important associated studies, reports and plans were not available**. While it is typical that an environmental assessment, as a planning tool, is conducted early in the planning phases for a proposed project, there is a substantial lack of detail available regarding many aspects of the Keltic LNG/Petrochemical facility proposal. In the EIA Report, and in answers provided to the Panel during the hearings, frequent references were made to the FEED (Front End Engineering Design) phase of the project, which will follow completion of the EA process. Information which is to be developed during the FEED phase was unavailable to the Panel for purposes of this review.
>
> **The large number of studies, reports and plans noted here, which are to be developed and delivered after the EA process, will be critically important to provincial and federal regulatory agencies in judging the adequacy of project details and environmental/social protection measures**.[209]

393. The Keltic Panel then made the following recommendations:

> 6.2.5 Recommendations
>
> 6.2.5.1 The EIA Report provides a list of studies, reports and plans noted by the Panel which the Proponent has committed to deliver. In addition, the Panel has recommended additional work which will be required (Section 6.2, this Report). **The Panel recommends that NSDEL ensure that a complete and accurate list of required studies, reports and plans is developed, and that these documents are provided by the Proponent to NSDEL and other responsible provincial or federal regulatory authorities. It will be the role of each relevant agency to review the appropriate documents prior to the issuing of any permits which would enable the project to proceed.** All such studies, reports and plans will be made available to the public once approved. (emphasis added)

394. In Keltic Dr. Blouin's Panel further recommended a number of studies, plans and guidelines be developed as well as reporting mechanisms, the requirement to obtain further data on several contaminants, the institution of a dispute resolution procedure for ground water issues, proactive monitoring and mitigation measures that would all be based on the results of further studies.

395. His Panel also made recommendations regarding noise and light, surface water, groundwater and marine water, among others:

> <u>Noise/Light (5.4)</u>
>
> 5.4.5.1 That the Proponent's Noise Monitoring Program, rather than monitoring noise through complaints, ensure that sound levels meet the lowest levels as established by all levels of government. The plan must not be dependent on impacts on 'sensitive receptors' which are often defined as public uses such as schools and health care facilities (these are not near the project site). The plan must also include methods by

[209] Keltic Board Report, Panel Findings, at 6.2.4 **(C-685)**.

which the marine environment will be monitored for noise as a result of construction and operation, including shipping and marine terminal operations.

5.4.5.2 That the Proponent submit a Lighting Design Plan and establish a Light Monitoring Plan for approval by NSDEL prior to the issuing of any permits.

Surface Water and Wetlands (5.5)

5.5.5.1 That prior to the issuing of any permits, the Environmental Protection and Erosion and Sediment Control Plans be submitted by the Proponent and approved by NSDEL. These Plans must include sufficient detail to enable NSDEL to ensure that erosion and sediment control measures are adequate, particularly with regard to the proposed removal of organic soils and vegetation from the area to be flooded at Meadow Lake, so as to minimize impacts to the lake and downstream systems.

5.5.5.2 That prior to the issuing of any permits, the Wetland Compensation Plan be submitted by the Proponent and approved by NSDEL. This Plan must include adequate plans for avoidance, rehabilitation, or compensation for disturbance or destruction of wetlands, in accordance with the Wetlands Policy of NSDEL. A Wetland Compensation Plan is to be added to the list of reports and plans that are to be prepared by the Proponent (Section 6.2, this report).

Ground Water (5.6)

5.6.5.2 That the Proponent establish an arbitration and resolution procedure to deal with impacts to wells and drinking water supply for residences near the project area to the satisfaction of NSDEL and Nova Scotia Department of Health Promotion and Protection (NSHPP), to be delivered to homeowners prior to any construction activities. This procedure should specify the types of permanent solutions to be provided in cases where they may be needed.

Marine Water (5.7)

5.7.5.1 That NSDEL and appropriate federal authorities require the Proponent to initiate, prior to any construction activities a marine water and sediment quality monitoring program, with scope and parameters to be determined by those government authorities.

5.7.5.2 That the Proponent conduct, prior to the issuing of any permits, a receiving water assimilative capacity study for Isaacs Harbour, in accordance with NSDEL regulations for wastewater and stormwater discharge approval.

396. The Keltic Environmental Assessment Board recognized that its recommendations could be attached as conditions of any Ministerial approval for the Keltic project, by the Minister of Environment. As his Keltic Panel put it:

> "These recommendations should be attached as conditions of any Ministerial approval for the Keltic project under Section 40(1)(b) of the Environment Act and Regulation 26(1) of the Environmental Assessment Regulations."[210]

[210] *Ibid.,* **(C-685)**.

Attached to my first Expert Report as Appendix O are the Nova Scotia Environmental Assessment Board recommendations with respect to the Keltic project. These are taken from page 5-14 of the Nova Scotia Environmental Assessment Board Report.

397. In considering Dr. Blouin's critique as to WPQ's approvability, based on his uncertainty concerns, it is important to note the contrary approach he found acceptable in Keltic, an approach that did not require these significant matters to be studied prior to EA approval, but only afterwards.

398. I set out below some of these studies in order to demonstrate that in its review of the Keltic project, Dr. Blouin and his Panel approached the issue of potentially absent, missing or insufficient information or commitments by the proponent in a manner that conflicts totally with Dr. Blouin's speculation about these matters in his expert report.

399. For example, in the WPQ context, the JRP criticized the proponent for relying on meteorological or other data that was obtained at a location some distance from the proposed site. In contrast, in Keltic, Dr. Blouin's Panel recognized that there was an appropriate way of dealing with such a concern, requiring that, *inter alia*:

> ". . . prior to any construction activities, the Proponent supply to NSDEL seasonal baseline data for ambient and peak concentrations of gases and aerosols that may be released from the proposed project, including . . . particulate matter less than 2.5 micrometres in diameter (PM 2.5) and particulate matter less than less than 10 micrometres in diameter (PM 10)."
>
> ". . . prior to any construction activities, the Proponent collect appropriate meteorological data at the proposed project site for at least two seasons. The Proponent will statistically and quantitatively compare this new data to Shearwater and Yarmouth climate data used in the EIA air quality dispersion model to ensure that valid data is used in the model. The Proponent will identify details about microclimate issues in the project area that could affect the dispersion model. These findings will be given to NSDEL and other appropriate agencies for review."[211]

400. Both of these recommendations are reflected in condition 1.4 of the Keltic Petrochemical Nova Scotia Environmental Assessment Approval:[212]

> *"*Prior to application for Part V approval under the Environment Act the Proponent must provide for review and approval:
>
> 1.4 the following air emissions data for NSEL review prior to submission of the project air monitoring program:

[211] Keltic Board Report, at pp. 6-7 **(C-685)**.

[212] Nova Scotia, Environmental Assessment Approval – Keltic Petrochemicals Inc LNG and Petrochemical Plant Facilities (March 14, 2007) **(C-1431)**.

- chemical characterization of Sable Offshore Energy Inc. (SOEI) gas plant particulates and SOx emission
- anticipated emissions data from the proposed petrochemical plant for SOx , O3 , known specific VOCs, and other air emissions as appropriate, based on relevant Alberta and Ontario data
- anticipated emissions data for the proposed incinerator, including emission compounds, concentrations and incinerator hours of operation
- two seasons of meteorological data on the site, to identify variances with data used in the existing air quality dispersion model
- results of an air quality dispersion modelling exercise using site specific meteorological data. The model will be used to produce maximum and annual concentration contour maps for air quality components to be determined by NSEL. The contour maps will cover a radius of 25 km from the Goldboro project site."

401. Dr. Blouin's Keltic Panel also recognized that, in some matters, it would be appropriate to recommend to statutory decision makers that no permits be issued until more work had been completed. For example:

> "That prior to the issuing of any permits, the Environmental Protection and Erosion and Sediment Control Plans be submitted by the Proponent and approved by NSDEL. These Plans must include sufficient detail to enable NSDEL to ensure that erosion and sediment control measures are adequate, particularly with regard to the proposed removal of organic soils and vegetation from the area to be flooded at Meadow Lake, so as to minimize impacts to the lake and downstream systems.
>
> "That prior to the issuing of any permits, the Wetland Compensation Plan be submitted by the Proponent and approved by NSDEL. This plan must include adequate plans for avoidance, rehabilitation or compensation for disturbance or destruction of wetlands, in accordance with the Wetlands Policy of NSDEL. A Wetland Compensation Plan is to be added to the list of reports and plans that are to be prepared by the Proponent."[213]

402. These recommendations were also accepted and subsequently imposed as terms and conditions in the Nova Scotia Environment Minister's approval of the Keltic environmental assessment.[214]

403. The WPQ Panel was concerned about what it considered to be an insufficient buffer zone between wetlands or other water bodies. That was also a concern to the Nova Scotia Environmental Assessment Board in the Keltic review. Yet rather than simply indicating that was going to be a prejudicial issue to the proponent, the Nova Scotia EAB found that it was

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[213] Keltic Panel Report, at pp. 6-7 **(C-685)**.

[214] Nova Scotia, Environmental Assessment Approval – Keltic Petrochemicals Inc LNG and Petrochemical Plant Facilities (March 14, 2007) **(C-1431)**.

appropriate to impose a condition that increased the set-back as follows: "That the undisturbed buffer zone between wetlands or other water bodies and adjacent construction activities be increased from 15 metres to 30 metres."[215]

404. With respect to groundwater and wells, the WPQ Panel indicated that it could not be positive about how its concern could be rectified. In contrast, Dr. Blouin in Keltic recognized that there was an appropriate method to deal with this issue. Once again, his Panel recommended that terms and conditions be imposed. With respect to groundwater, it recommended:

> "That the Proponent establish an arbitration and resolution procedure to deal with impacts to wells and drinking water supply for residences near the project area to the satisfaction of NSDEL and Nova Scotia Department of Health Promotion and Protection (NSHPP), to be delivered to homeowners prior to any construction activities. This procedure should specify the types of permanent solutions to be provided in cases where they may be needed."[216]

405. Marine water issues were an important concern to the WPQ Panel. However, in Keltic, Dr. Blouin's Panel dealt with similar concerns by making recommendations, including the following:

> "5.12.5.5 That the Proponent carry out a marine-suspended-matter contaminant monitoring program prior to any construction activities to study the distribution, composition and movement of suspended particles in waters around local lobster beds and the Country Harbour mussel farm. This monitoring program will be repeated during the production phase of the project. This program will be part of the Erosion and Sediment Control Plan. Local fishers are to be consulted to establish monitoring sites and NSDEL is to be consulted to design the monitoring program and to review the results."[217]

> "5.7.5.2 That the Proponent conduct, prior to the issuing of any permits, a receiving water assimilative capacity study for Isaacs Harbour, in accordance with NSDEL regulations for wastewater and stormwater discharge approval."[218]

406. Terrestrial habitat was a concern to the WPQ JRP; it was also an issue in the Keltic proposal. Dr. Blouin's EAB Panel recommended conditions regarding this topic, including the following:

> "That NSDEL and NSDNR [Department of Natural Resources] ensure that mitigative and monitoring measures for wildlife and vegetation are adequate and that they are

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[215] Keltic Panel Report, at p. 8 **(C-685)**.

[216] Ibid., at p. 8. **(C-685)**.

[217] *Ibid.,* at p. 10 **(C-685)**.

[218] *Ibid.,* at p. 9 **(C-685)**.

> applied as required, and fully documented in the Environmental Protection Plan (EPP)."[219]

407. Fisheries, aquaculture and resource harvesting were also issues in the WPQ JRP Panel Report. However, in the Keltic review, the Nova Scotia EAB again took a positive and concrete approach to these issues by requiring conditions such as the following:[220]

> "That the Proponent complete a more detailed examination of the potential impacts on the salmon migration corridor and the impacts of the Meadow Lake alterations on this corridor prior to the issuing of any permits, with the results to be reported to NSDEL and DFO."
>
> "That the Proponent develop a detailed communications plan for fishers, and all other boaters and recreational users in relation to shipping traffic, and consideration be given to consulting with Transport Canada to establish a Harbour Master office to ensure safe and timely passage."

The Highway 104 Project – Dr. Blouin as Chair of the EAB Panel Review

408. In 2005, Dr. Blouin chaired the "Highway 104 at Antigonish Hearing Panel" for the Nova Scotia Environmental Assessment Board.

409. The project was "the proposed construction, operation and maintenance of an approximately 15 km fully controlled access, 4-lane divided highway" proposed by Nova Scotia Transportation and Public Works. The highway was to have a design speed of 120 km. per hour and a right-of-way width of 150 m. It would also have a number of interchanges as well as an overpass and would cross two major water crossings and a number of smaller water crossings.[221]

410. At pp.15-16 of the Report Panel, Dr. Blouin's Panel noted and commented that there was inadequate information in the EIS regarding fish habitat:

> "In many places in the EA Report, mitigations are described in terms of measures that may be considered, without firm commitments, or the EA Report suggests that multiple options exist without committing to a specific course of action. This renders it difficult for the Panel to adequately judge the likely impact of the Project in such a case, or to assess the differential impacts of multiple options."

411. Despite the lack of specificity of the proposed course of action and the fact that mitigation measures were not project-specific, Dr. Blouin's Panel did not find these information gaps to be sufficient to recommend against EA approval. Instead, Dr. Blouin recognized that, at the

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[219] *Ibid.,* at p. 9 **(C-685)**.

[220] *Ibid.,* at p. 9 **(C-685)**.

[221] NSEAB, Report and Recommendations to the Minister of Environment and Labour for The Environmental Assessment Highway 104 at Antigonish, August 2005, p. 7 **(C-1432)**.

EA review stage, there will often be uncertainties, including the impossibility of identifying required or even best possible mitigation measures:

> "The Proponent has explained that, at this stage or project planning, detailed design information is sometimes not yet available, making final choice of options or mitigation measures impossible. This is understandable at this phase of the project, and is not uncommon in the context of environmental assessment. However, in some cases the result may be that the Panel finds it necessary to recommend a particular option or course of action, where feasible, as a way of ensuring minimal impact." (Emphasis added)

412. Dr. Blouin's Panel also made a similar comment in respect of wetlands. The Panel's findings on this topic are also instructive:

> "It was not clear in the EA Report if a firm commitment was made to the sedimentation and erosion control measurers listed on p. 177. The Proponents indicated that the commitment is to implement standard NSDTPW procedures. It was also not clear if there was a firm commitment under the Wetland Compensation Plan to replace lost hydrologic functions in damaged habitat, and undertake monitoring. The Proponent indicated that further design detail is required to define the roadway footprint and thus the impacts. . . .
>
> While it is understandable that, at this stage of project planning, detailed design work has not been completed, it is important to understand the specific commitments and options which will, or will not, be implemented."[222]

413. The Panel then recommended in light of these related observations that the Proponent "consult with Environment Canada, as an expert federal department on the preparation of the Wetland Compensation Plan, and make reasonable efforts to reach agreement on plan provisions" and that further field survey be undertaken following detailed design work, to define the areas and extent of project impacts on wetlands:

> "That, if the field studying detailed design reveal that impairment of hydrologic function or damage to wetland habitat results, then the Wetland Compensation Plan include replacement of hydrologic function and/or habitat as appropriate."[223]

414. These findings and recommendations demonstrate that Dr. Blouin and the Nova Scotia Assessment Board were prepared to approve an environmental assessment of a major highway project without the required field studies being done, the design issues dealt with and the extent of wetland impacts being known and, if they would result in such impacts, how they would be addressed.

415. This approach, in my view, is in complete conflict with his position articulated in his Expert Report to the effect that missing information of such a critical nature would be detrimental to

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[222] *Ibid.*, pp. 28-29 (emphasis added).

[223] *Ibid.*, p. 29.

the prospects of the WPQ being approved. It is noteworthy that he was willing to be flexible and reasonable, and to use the usual EA panel review approach regarding such matters in the Highway 104 project proposed by the Nova Scotia government, but is now unwilling to use that same approach in the case of the WPQ, which he knows has been opposed by the Nova Scotia government.

416. In summary, it is perplexing that Ms. Griffiths and Dr. Blouin did not refer in their Expert Reports to their own direct experience as review panel chairs in different Nova Scotia projects that were subject to CEAA and the NSEA, and which presented similar or analogous issues and uncertainties as the ones they reference in their witness statements. As panel chairs for those EA reviews, neither of them recommended against EA approval, but rather issued recommendations that these projects be approved, with terms and conditions that would address the kind of issues they now claim would be problematic in the context of the WPQ project.

DR. BLOUIN AND MS. GRIFFITHS APPROACH APPROVABILITY ON A "WORST CASE" BASIS AND WITHOUT DUE REGARD FOR THE IMPORTANT ROLE OF TERMS AND CONDITIONS

417. In their expert reports, neither Dr. Blouin nor Ms. Griffiths acknowledge, let alone reference, the standard practice used in Nova Scotia by the Minister of Environment in approving every complete environmental assessment application, even where information is missing or there are uncertainties and studies or other issues to be resolved by the imposition of terms and conditions.

418. The uncertainties cited by Dr. Blouin and Ms. Griffiths to prognosticate doubts as to the approvability of the WPQ are by no means unique; in fact these uncertainties were typical in comparator projects and addressed in Nova Scotia under Part V of the NSEA, the project-specific / approval stage. Indeed, I have included comments earlier in this report from federal and provincial officials that exemplify how potentially incomplete information or other uncertainties would be resolved through the imposition of terms and conditions in the project licensing process.

419. If Dr. Blouin and Ms. Griffiths had presented a more neutral analysis, they would have taken the usual approach that they have consistently taken when serving as panel chairs. That approach would consider similar projects, in which similar issues arose, and whether approval of the projects was given by the Nova Scotia and Federal Environment ministers, either through the use of appropriate mitigation measures or imposition of terms and conditions to address such issues, or by determining in some that these issues were irrelevant to EA approval, (*i.e.*, that the projects were to be approved regardless of the critique without terms and condition that addressed the matter).

420. Clearly, had they considered the nearly 50 quarry and mining projects for which EA approval was given in Nova Scotia since 2000, as well as the other 100 projects for which EA approval was given, they would have been compelled to note in their witness statements that where the issues they raise did arise in other projects, they in no way affected the approval of such projects.

Nova Scotia EA Practice in the Approval of Marine Terminals

421. For example, the array of environmental control and mitigation plans required under the terms and conditions made part of the EA approval for the Bear Head LNG Terminal project again demonstrates that NSEA practice does not require complete information detailing all aspects of the project before EA approval is given.

422. The Bear Head LNG Terminal approval,[224] issued in 2004, was almost entirely comprised of conditions requiring the proponent to submit details for plans that would address various environmental components that would be affected by the project. Condition 2.1 required the proponent to "submit for review and approval, an Environmental Protection Plan for the project to be implemented through all phases of construction and operation of the facility" prior to construction. The following plans were required to be provided by the proponent by virtue of the EA Approval document and most of these plans were required to be reviewed and approved by or developed in consultation with Nova Scotia:

(a) details of a storm water management plan

(b) details of a program for monitoring surface water quality

(c) a wetland protection and mitigation plan

(d) a wetland compensation plan

(e) a mitigation and follow-up monitoring plan for the Southern Twayblade (*Listera australis*)

(f) dust control contingency plan

(g) noise management and contingency plan

(h) waste management plan

(i) road traffic management plan

(j) Archaeological Contingency Plan

[224] See exhibit **C-1433**.

(k) Spill Management Plan and Emergency Spills Contingency Plan

(l) Contingency plan that addresses emergency responses[225]

423. In the Melford International Terminal Project, the proponent was also required by virtue of the terms and conditions imposed by the Nova Scotia Environment Minister in his EA approval to submit similar plans – *i.e.*, a surface water management plan, an Environmental Management plan, a waste management plan, etc. Details of mitigation measures were also to be provided under such plans. For example, Condition 5.3 stipulated:

> 5.3 The Proponent, as part of the EMP, must submit for review and approval a habitat and wildlife protection plan. The plan must be developed in consultation with NSDNR Wildlife Division, Canadian Wildlife Service, and include input from the Mi'kmaq Community prior to site development. The plan shall include:
>
> a) details of all species to be protected and protection objectives
>
> b) mitigation measures including areas of avoidance
>
> c) monitoring and reporting plans[226]

424. In addition, there were terms and conditions in the Melford International Terminal approval document that required the Proponent to carry out further testing and verify that air quality standards would be met. For example, Condition 3.3 required the proponent, prior to site development, to "provide NSE with results of testing for acid generating rock, and if required by NSE, must develop and implement an acid generating rock management plan". Similarly, Condition 6.2 required:

> "Prior to construction, the Proponent must provide documentation to demonstrate to NSE's Air Quality Branch how provincial ambient air quality criteria will be met at all times during operations."

425. In the Sydney Harbour Access Channel Deepening and Sydport Container Terminal EA approval, many similar terms and conditions requiring the proponent to submit details for the various plans mentioned above can also be found. This again exemplifies how uncertainties can be and were in fact dealt with by the use of terms and conditions. For example, Condition 3.2 required the proponent to provide, as part of the application for Part V approval under the *Environment Act*, "details of the water supply demands of the facility" and "to

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[225] See *Nova Scotia Environment and Labour (NSEL) Environmental Assessment Approval,* August 9, 2004, Bear Head LNG Terminal at Term 1.4 **(C-1433)**, referencing Jacques Whitford, *Bear Head LNG Terminal Environmental Assessment,* May 2004 at pp.9-1 to 9-5 **(C-1434)**.

[226] Minister Mark Parent (Department of Environment), Melford Terminal Environmental Assessment Approval and Terms and Conditions, October 23, 2008 **(C-1435)**.

confirm whether these demands will be met within the existing capacity of the Sydney Well Field".[227]

Nova Scotia Standard EA Practice in Approval of Other Quarry and Mining Projects

Ms. Griffiths and Dr. Blouin Do Not Reference That In The WPQ Process, Nova Scotia And Federal Officials Informed The JRP That Standard EA Practice (Terms and Conditions) Would Be Applied to Address Uncertainties And Other Details

426. What is evident from a review of the EA approvals issued by Nova Scotia for the 50 quarry and marine terminal projects listed in Appendix C to my March 2017 Expert Report, is that even where there was missing information or insufficient studies, Nova Scotia EA practice has consistently been to accept the EA, relying upon terms and conditions for such information to be provided before any operation or activity begins or any further necessary approval being granted.

427. A review of Nova Scotia EA approvals for quarry, mine and sandpit projects before and during the same time period as WPQ project was being reviewed, such as the Elmsdale Quarry Expansion Project,[228] the Rhodena Rock Quarry Expansion (2006),[229] the Sovereign Resources Quarry Expansion Project (2005),[230] the White Rock Quartz Mine (2002),[231] and the Miller's Creek Fundy Gypsum Project all confirm that it was standard Nova Scotia EA approval practice to use specific terms and conditions to grant EA approval for quarries in the face of uncertainties or simply the foreseeable need to provide further details and plans. As noted above, EA approvals for these types of project with these types of conditions is largely "boiler plate" EA approval practice in Nova Scotia. (The terms and conditions for Sovereign Resources, Elmsdale and Rhodena are found as Appendices L, M and N to my First Expert Report.)

428. For instance, WPQ JRP issues referenced by Ms. Griffiths and Dr. Blouin, such as uncertainties regarding possible impacts of quarry activities on the local groundwater, and its concerns about the need for additional hydrogeological testing, data collection, analysis

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[227] Minister David Morse (Department of the Environment), Sydney Harbour Access Channel Deepening and Sydport Container Terminal EA Approval and Conditions, (April 28, 2009) **(C-1436)**.

[228] Environmental Assessment Approval, Elmsdale Quarry Expansion, July 24, 2007, available at: http://www.gov.ns.ca/nse/ea/elmsdalequarryexpansion/ElmsdaleQuarryExpansionConditions.pdf **(R-109)**.

[229] Environmental Assessment Approval, Rhodena Rock Quarry Expansion, April 18, 2006, p. 5, available at: http://www.gov.ns.ca/nse/ea/porcupinequarryexpansion/PorcupineQuarryExpansion_Conditions.pdf **found at Appendix N of David Estrin's 2011 Report**.

[230] Environmental Assessment Approval, Sovereign Resources Quarry Expansion, August 29, 2005, available at: http://www.gov.ns.ca/nse/ea/sovereignquarry/Sovereign_Conditions.pdf. **(C-569)**.

[231] Environmental Assessment Approval, White Rock Quartz Mine, September 2, 2002, available at: http://www.gov.ns.ca/nse/ea/bbullwhiterock2/bbul2toc.pdf. **(C-1437)**.

and modelling could have been addressed, as in other quarry EA approvals, by that approval imposing conditions that required these matters to be carried out before a Part V NSEA permit was issued. (A similar recommendation was included in the Sydney Tar Ponds Panel Report.[232]) Another concern these witnesses referenced was uncertainties surrounding the use of explosives.[233] However, they do not mention or consider the fact that Nova Scotia typically requires as a condition of quarry EA approval that a detailed blasting plan be prepared for approval by Nova Scotia and that some of these approvals include specific blasting conditions, such as, say, restrictions on blasting at certain times of day, in certain seasons, or in certain weather or sea conditions.[234]

429. A good example is the Sovereign Resources Quarry Expansion project EA Approval [see appendix L to my first Expert Report]. This was a 180 hectare expansion of an existing 19 hectare quarry. The project was to produce roughly 90,000 tonnes of aggregate per year over a 50 year period, which was to be generated by blasting 20 to 30 times per year. During the environmental assessment of the project, concerns were raised about many of the same issues raised by Ms. Griffiths and Dr. Blouin, including blasting, vibration, noise, dust, and water quality.

430. The many terms and conditions included in the EA approval for the Sovereign Resources Quarry Expansion project could equally have been applied to the WPQ project to address many of these witnesses' prognosticated concerns. These terms and conditions address the following: noise and vibration, archaeological resources, proximity to residents and public involvement, air quality, groundwater resources, surface water, flora and fauna, wetlands, visual environment, quarry plan and operation, site reclamation, and monitoring and contingency plans.[235]

431. These terms and conditions included a requirement to provide "an updated blast design plan" for review and approval by the province, as well as restrictions on the time of day when blasting can take place.[236] The entire approval is attached as Appendix L to my First Expert Report. The Elmsdale Quarry Expansion project and the Rhodena Rock Quarry Expansion contain similar detailed terms and conditions (Appendices M and N to my first Expert

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[232] Sydney Tar Ponds Panel Report, *supra* note 197, Recommendations #7 and #8. **(C-534)** Other Panels have also made recommendations regarding the study of groundwater prior to proceeding with the project; see for example, the Joint Review Panel report for the Rabaska LNG Terminal and Related Infrastructure Project at p. 201. **(C-530)**.

[233] WPQ Panel Report, at p. 28. **(C-034)**.

[234] See terms and conditions of this nature imposed in EA approvals for other Nova Scotia Quarries found at Appendices L and M to my First Expert Report.

[235] Environmental Assessment Approval, Sovereign Resources Quarry Expansion, August 29, 2005, available at: http://www.gov.ns.ca/nse/ea/sovereignquarry/Sovereign_Conditions.pdf **(C-569)**.

[236] *Ibid.*, s. 2.1(a) and s. 2.7.

Report). These approvals confirm my conclusion that it is the normal practice in Nova Scotia for uncertainties and concerns identified in the EA process to be resolved through the imposition of detailed terms and conditions.

To a large extent, the language used in terms and conditions for such Nova Scotia EA quarry approvals can be largely similar, particularly with respect to the issue of groundwater monitoring, noise and other issues. In effect these can be characterized as being essentially boilerplate conditions. **Table 2** below sets out groundwater terms and conditions applied in four quarry EA approvals. **Table 2** demonstrates just how similar such EA conditions have been.

Table 2: Groundwater conditions applied by Nova Scotia in the EA approval for four quarry projects in the period 2005-2016				
Project	Black Point Quarry Project (2016)	Elmsdale Quarry Expansion (2007)	Rhodena Rock Quarry Expansion (2006)	Sovereign Resources Quarry Expansion/Modification (2005)
Condition	4.1 The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must submit to NSE for review and approval: a) a groundwater monitoring program including the location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and b) a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and	3.1 The Proponent, as part of the application for Part V approval under the Environment Act, must provide for review and approval: a) Details of a groundwater monitoring program including location of monitoring wells and parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Proponent must make necessary modifications to mitigation plans and/or quarry operations to prevent continued unacceptable environmental effects to the satisfaction of NSEL. The program must be resubmitted over the lifetime of the project, at a schedule established by NSEL, and revised as determined by NSEL. b) Details of a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material	4.1 The Proponent, as part of the application for Part V Approval under the Environment Act, must provide for review and approval: a) Details of a groundwater monitoring program including location of monitoring wells and parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Proponent must make necessary modifications to mitigation plans and/or quarry operations to prevent continued unacceptable environmental effects to the satisfaction of NSEL. The program must be resubmitted over the lifetime of the project, at a schedule established by NSEL, and revised as determined by NSEL. b) Details of a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and	6.1 The Proponent, as part of the application for amendments to the Part V Approval under the Environment Act, shall provide for review and approval: a) Details of a groundwater monitoring program including location of monitoring wells and parameters. This program shall be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Proponent shall make necessary modifications to mitigation plans and/or quarry operations to prevent continued unacceptable environmental effects to the satisfaction of NSEL. This program shall be resubmitted over the lifetime of the project, at a schedule to be established by NSEL, and revised as determined by NSEL. b) Details of a monitoring program to determine the potential for and extent of sulphide bearing material and a

Table 2: Groundwater conditions applied by Nova Scotia in the EA approval for four quarry projects in the period 2005-2016				
Project	Black Point Quarry Project (2016)	Elmsdale Quarry Expansion (2007)	Rhodena Rock Quarry Expansion (2006)	Sovereign Resources Quarry Expansion/Modification (2005)
	associated drainage (in consultation with NSE). 4.2 The Approval Holder must not excavate below mean sea level, unless otherwise approved by NSE. 4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of quarrying operations to the satisfaction of NSE.	and associated drainage (in consultation with NSEL). 3.2 The Proponent must replace, at their expense, any water supply which has been lost or damaged as a result of extracting aggregate. 3.3 The Proponent must obtain written permission from all property owners with structures located off-site within 800m if a point of blast 3.4 The Proponent must secure, from the Minister, an approval amendment prior to excavating below the watertable.	associated drainage (in consultation with NSEL). 4.2 The Proponent must replace, at their expense, any water supply which has been lost or damaged as a result of extracting aggregate. 4.3 The Proponent must secure, from the Minister, an approval amendment prior to excavating below the watertable.	plan to manage any exposed acid generating material and associated drainage (in consultation with NSEL).

432. **Table 2** illustrates that Nova Scotia applies essentially generic conditions in quarry approvals, *e.g.*, for groundwater.

433. Neither Dr. Blouin nor Ms. Griffiths refer to such generic terms and conditions nor do they refer to how such conditions have normally been part of the EA approval for quarries. They also appear not to have referenced testimony by Nova Scotia Environment officials during the WPQ JRP hearing where these officials explained their standard practice.

434. The generality of the terms and conditions imposed in the EA approval can be explained by the existence of a more detailed review under the Part V NSEA approval, where a second set of terms and conditions under the Part V approval process are provided in order to address more technical issues.

435. My review of the EAs for these projects indicates that it is standard practice to address uncertainties and the lack of information through the use of terms and conditions. Additionally, the terms and conditions imposed in comparator projects in Nova Scotia demonstrate that many of the standard terms and conditions typically imposed in quarry or mining projects could and would have been used to address the concerns raised by these witnesses about WPQ.

436. These witnesses' concern about approvability issues is also inconsistent with the clear information provided by Nova Scotia Environment officials to the JRP that such questions are regularly addressed through Part V *Environment Act* Industrial Approvals that must be obtained to construct and operate the project, and other licensing processes.

437. Ms. Griffith and Dr. Blouin do not note the transcripts of the WPQ JRP Hearing show that in an oral submission to the JRP, Kim MacNeil, Director of Environmental and Natural Areas, Management and Protection Division, Nova Scotia Environment and Labour (NSDEL), told the JRP that following the EA process there would be a "second detailed review of the proposal under Part V of the *Environment Act*, and that this is commonly known as the Industrial Approval.[237] The official went on to note that during that process it was standard practice for NSDEL to require "detailed engineering drawings of key features of the site; for example, the sedimentation ponds, as well as blasting procedures, confirmation of the consent of dwellings within 80 metres, as well as any . . . monitoring, and mitigation or contingency plans".[238]

[237] NSDEL submission at JRP hearing, vol.5, pp. 989:7-12 **(C-158)**.

[238] Ibid., p. 1019:6-12 (Bob Petrie, NSDEL) **(C-158)**.

438. Furthermore, Director McNeil told the JRP that a specific detailed review of the surface water drainage aspects of the quarry proposal as well as other aspects is standard practice and common to these quarries and similar projects in the permitting process (once project designs were more detailed and closer to their final form).[239] Therefore, the criticisms of a lack of specificity by the JRP at the stage of EA approval were inconsistent with typical practice.[240]

439. As explained by Bob Petrie, Regional Manager of the Environmental Monitoring and Compliance Division for the Western Region, Nova Scotia Department of Environment and Labour, during the JRP hearings:

> The approval itself, once issued, will consist of a number of terms and conditions which will address all of the *[sic]*, I guess, key environmental effect components, whether it's surface water discharge, airborne particulate, blasts, vibration and air concussion, as well as the requirement to submit a rehabilitation plan to us within a certain period of time.[241]

440. In Nova Scotia Environment & Labour's presentation to the WPQ JRP on June 21, 2007, the department identified a number of potential impacts that any quarry could potentially have, such as on drinking water, groundwater, surface water, waste water, and air quality, but in the same presentation, the department officials articulated how such impacts can be prevented, mitigated or otherwise minimized. For example, this part of the NSDL presentation, made by Director McNeil, stated that "approaches to manage potential effects on drinking water and groundwater include: groundwater and water well monitoring plans; and contingency plans to address impacts to water wells".[242] Nova Scotia Environment officials also told the JRP in their submission that air quality issues "can be dealt with through Part V Approval under the *Environment Act*", by requiring the proponent to: summarize predicted air emissions and noise levels; to predict impacts; and to develop and submit a monitoring plan and a management plan.[243]

441. The testimony of Bob Petrie, NSDEL Regional Manager, Environmental Monitoring and Compliance Division, Western Region to the JRP was also very clear in confirming to the JRP

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[239] *Ibid.,* at p. 990:3-11 **(C-158)**.

[240] [Keltic Panel Report at 7-8 **(C-570)**. In Keltic, the Nova Scotia Environmental Approval Board noted the following: "That prior to the issuing of any permits, the Environmental Protection and Erosion and Sediment Control Plans be submitted by the Proponent and approved by NSDEL. These Plans must include sufficient detail to enable NSDEL to ensure that erosion and sediment control measures are adequate, particularly with regard to the proposed removal of organic soils and vegetation from the area to be flooded at Meadow Lake, so as to minimize impacts to the lake and downstream systems."

[241] JRP Hearing Transcript, Volume 5 at p. 1019: 17- 23 **(C-158)**.

[242] Nova Scotia Environment & Labour, Presentation to the Whites Point Quarry Joint Review Panel (June 21, 2007), available online: http://www.ceaa.gc.ca/B4777C6B-docs/WP-1784-003.pdf **(C-1438)**.

[243] *Ibid.,* at slide 15. See also note 35 **(C-158)**, at p. 991.

that it was standard NSDEL practice that associated with an EA approval would be a much more detailed and stringent examination by the department of the project's potential impacts and that this process would involve experienced professionals such as engineers and hydrogeologists, that this typically required detailed plans and information be provided by the proponent, including monitoring and management plans that would be reviewed by the department. It could also involve coordination with federal officials on these matters.

442. Mr. Petrie testified as follows to the JRP:

> ". . . following an environmental assessment process, should a Proponent successfully complete that, they go on to what we call the Part V approval or the industrial approval, which is evaluated in our division using local engineering staff as well as local hydrogeologists and technical staff. This approval process is a very technical review looking at the core environmental issues of the facility. In our application process, we would require typically detail that may not have been needed in the environmental assessment process, right down to the specific design specifications, for example if something were I guess described conceptually in the E.A. process, we would look at that and at the level of design engineering in the industrial approval process. Typically, the information we require during this evaluation includes process description and engineering plans; as well as project-specific environmental management plans; descriptions of all wastes, emissions and potential adverse effects; monitoring and mitigation plans; exceedance response protocols and contingency plans; as well as rehabilitation plans. This application process can also, as needed, involve consultation with other federal and provincial agencies on specific items where we may require input or expertise."[244]

443. Even on the issue of groundwater impacts, John Drage from Nova Scotia Environment and Labour informed the JRP that the necessary information could be required as a condition in either the environmental assessment approval or the Part V approval process. He stated:

> Sometimes the information, including numerical models, is available up front during the EA process or before the Part 5 approval is written, and sometimes it's a condition in either one of those approvals.[245]

444. As the statement by Mr. Petrie below reveals, NSDEL officials were even open to the possibility of imposing requirements to replace damaged groundwater supplies as a condition to project approval:

> "It is not unusual for there to be a condition in the approval as well which reconfirms that a Proponent is responsible for replacing, you know, lost or damaged water supplies."[246]

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[244] See JRP hearing transcript Vol. 5, June 21, 2007 **(C-158)**, at pp.992-994.

[245] JRP Hearing Transcript, Volume 6 at p. 1264:16-19 **(C-159)**.

[246] JRP Hearing Transcript, at p. 1265 **(C-159)** [Bob Petrie, NSDEL].

445. On the issue of blasting, Bruce Arthur of the Nova Scotia Department of Environment, told the JRP that any outstanding concerns regarding the effects of blasting and residual ammonia could be addressed in the licensing process through the inclusion of terms and conditions, as is the normal course:

> "You know, I understand the concern about ammonia levels and what not, and we would have terms and conditions within the Part V approval that would address that if that was identified as an issue through this environmental assessment process."[247]

446. With respect to wetlands, it was standard Nova Scotia EA practice that potential impacts upon wetlands could be mitigated or alternatively compensated for. Bob Petrie, NSDEL Regional Manager of Environmental Monitoring and Compliance, Western Region, told the JRP that:

> "I might just add to that that our Department does have a policy on wetland alterations, which if an alteration is proposed, it would need to be evaluated I guess for the level of impacts to that wetland.
>
> There is a provision in this policy to allow for either mitigation or compensation of the loss of wetland function that can't be mitigated, and that would be an option potentially available to us."[248]

447. It is perplexing that Ms. Griffiths and Dr. Blouin failed to consider these statements in the WPQ JRP transcript of the evidence of Nova Scotia officials as to how concerns similar to the ones these witnesses are asserting to this Tribunal would be accommodated and dealt with as a standard matter by imposing terms and conditions within the EA approval.

448. Based on these presentations by Nova Scotia Environment officials that clearly set out Nova Scotia's practice of requiring terms and conditions of the kind discussed above, any reasonable and objective EA reviewers would appreciate that any uncertainties perceived at the EA project planning stage for WPQ would be resolved by similarly applying terms and conditions in EA acceptance and that project approval would be recommended.

449. A recent example of Nova Scotia's use of terms and conditions to address uncertainty was evidenced in the processing of the BPQ project by Nova Scotia Environment. In this example, the lack of information or uncertainties was addressed as standard practice through the use of terms and conditions. This is evident in the comments of Gordon Check, Senior Hydrogeologist

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[247] JRP Hearing Transcript, at p. 1032:21-25 (per Bruce Arthur, NSDEL) **(C-158**). [Emphasis added]

[248] NSDEL submission to JRP, vol. 5 p.1013:22-1014.5 **(C-158**) [Bob Petrie, Regional Manager, Environmental Monitoring and Compliance, Western Region, NSDEL].

at Nova Scotia Environment, in his review of the proponent's response to information requests in BPQ, set out below:

> "Discussion: My request for an initial theoretical assessment of landward migration of the saltwater/freshwater interface **was not addressed – just their opinion they think it would not occur**. . . . The concern is that the site activity reclamation will result in a brackish lake as opposed to a freshwater lake and that localized saltwater intrusion into groundwater will occur.
>
> Alternate solution: Place conditions in the site Approval that would not allow excavation below mean sea level (msl). . . . " [249]

450. Similarly, despite finding that the proponent in BPQ's "plan does not provide an adequate, consistent long-term baseline monitoring network of groundwater for the potentially approved extent of site", the Nova Scotia official did not recommend that the project be denied approval. Instead, the official proceeded to make a recommendation on monitoring wells that would need to be installed by the proponent.[250]

451. Appropriate conditions addressing the lack of or inadequate information identified above were indeed imposed in BPQ:

> 4.0 Groundwater Resources
>
> 4.1 The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must submit to NSE for review and approval:
>
> a) a groundwater monitoring program including the location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and
>
> b) a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage (in consultation with NSE).
>
> 4.2 The Approval Holder must not excavate below mean sea level, unless otherwise approved by NSE.

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[249] Email from Gordon G Check to Helen McPhail dated May 13, 2015, *Re: Black Point Quarry: Proponent's responses to IRs on EIS* **(C-1439)** (emphasis added).

[250] *Ibid.*

4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of quarrying operations to the satisfaction of NSE.[251]

452. In my professional opinion it is not only unreasonable, but indeed irrational, to bring forward arguments why WPQ would have doubtful approvability based on factors that these witnesses assert, and yet allow the same witnesses to not consider and comment on the fact that such issues were not found to affect approvability of the BPQ and to also ignore why the expert CEA Agency, the Federal Environment Minister, and the Nova Scotia Environment Minister, all agreed that the similar issues would affect the approvability of BPQ.

COMPARISON OF THE SIMILARITIES OF POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES IDENTIFIED IN BPQ AND WPQ, AND IN THE CEA AGENCY'S REVIEW OF THE BPQ

453. In comparing the potential environmental effects of both WPQ and BPQ, I found that not only were many of the environmental effects similar in both projects, there were also similarities with respect to the mitigation measures proposed for both projects.

454. I further found that, for some environmental effects, Bilcon's mitigation measures were similar to the mitigation measures recommended by the CEA Agency in BPQ. The similarities between Bilcon's proposed mitigation measures and those recommended by the Agency in BPQ demonstrate the acceptability and feasibility of Bilcon's recommended mitigation measures. Further, many of the Agency's recommended mitigation measures could have addressed the JRP's concerns in WPQ. Yet Ms. Griffiths and Dr. Blouin omit any reference to these important facts.

455. I also compared Bilcon's proposed mitigation measures with federal and provincial conditions that were issued in BPQ. I concluded that for many those conditions, Bilcon's proposed mitigation measures would have satisfied key components and requirements and, in effect, would have pre-empted many of the requirements of the terms and conditions of the kind recommended in the BPQ review process. See further the following documents that are Appendices to this Report:

(a) "Comparison of Federal Ministerial EA Mitigation Measures and Conditions for Black Point Quarry with Whites Point Quarry Proposed Mitigation Measures" (**Appendix C** to this Report)

[251] See Nova Scotia, Environmental Assessment Approval, Black Point Quarry Project, April 26, 2016, available at: https://novascotia.ca/nse/ea/black-point-quarry/Decision.pdf; **Found at Appendix G of this Report) (C-1430)**.

(b) "Comparison of Provincial Ministerial EA Mitigation Measures and Conditions for Black Point Quarry with Whites Point Quarry Proposed Mitigation Measures" (**Appendix D** to this Report)

456. Again, Ms. Griffiths and Dr. Blouin omit any reference to conditions proposed for BPQ.

COMPARISON OF HOW THE CEA AGENCY IN BPQ DEALT WITH PUBLIC COMMENTS AND HOW SIMILAR ISSUES WERE DEALT WITH BY THE WPQ JRP

457. I also prepared a Chart, entitled "*Comparison of How the CEA Agency in BPQ Dealt with Public Comments Regarding Similar Issues Dealt with by the WPQ JRP*". **This chart is Appendix E to this Report**.

458. This chart highlights the concerns raised by members of the public, environmental and Indigenous groups, and government agencies in BPQ that were similar to the concerns raised by the Joint Review Panel in WPQ. It demonstrates how many of these concerns were treated and responded to by the Agency.

459. This comparison shows that many of the similar concerns raised before the JRP, when considered by the Agency in BPQ, were either not acted on or could be addressed, if required, by other means. These concerns did not affect the approvability of BPQ.

460. Neither Dr. Blouin nor Ms. Griffiths referenced any aspect of the BPQ Environmental Assessment Report (EAR) prepared by the CEA Agency (see Footnote 115). Had they done so, they would have recognized that many of the concerns they raise to doubt WPQ approvability were either not acted on by the Agency or were found to be possible to be addressed if required by other means.

461. In many instances, the Agency's approach demonstrates a stark contrast to the approach taken by the JRP in WPQ. Further, the Agency's response evidences standard EA review practice regarding JRP's concerns. Selected key comments received on the BPQ draft EAR are summarized in this chart. This chart was adapted from Appendix G of the BPQ EAR.

462. This chart is similar in format and uses the exact words found in the first four columns in the EAR Appendix G. However, I added a fifth column, "Comment" where I summarize the Agency's treatment of these concerns and comments and how the Agency's approach contrasted with the JRP's approach in WPQ.

463. Many of the critiques used by Dr. Blouin and Ms. Griffiths in doubting the WPQ's approvability were similar to the critiques made by the public, NGOs and Indigenous groups concerning the

BPQ project. This chart shows how the CEA Agency responded to those critiques and whether or not the Agency made a change in the draft EA Report as a result. In most cases, the Agency made no changes. This chart then contains my summary comments on how the CEA Agency's treatment of public, NGO, indigenous and government comments contrasted with the JRP's approach.

THE OPINIONS OFFERED BY DR. BLOUIN TO DOUBT THE APPROVABILITY OF WPQ UNDER THE NSEA ARE PROBLEMATIC

Summary

464. This section reviews the components of Dr. Blouin's expert report entitled "Analysis of Environmental Effects Pursuant to Nova Scotia's EA Regime" in which he provides his opinion as to why certain bio-physical effects also raise concerns with respect to socio-economic effects and that, in his view, these findings could warrant a recommendation for rejection of the WPQ by a review panel, absent the NAFTA breach.

465. In my review of this part of his report, I have noted that his opinions on these matters omitted consideration of how some of the same or analogous matters were not regarded as concerns by him when he recommended approval of other Nova Scotia EAs in which he acted as review panel chair. I also noted that other concerns he referenced were ones that did not stand in the way of EA approval by the Nova Scotia Environment Minister in other projects.

466. It is disconcerting that he did not attempt to address why his prognostication that the issues he has addressed in this part of his report would result in recommendations for EA rejection, despite the incontrovertible fact that no complete EA application in Nova Scotia in the period 2000-2016, other than WPQ, has ever been rejected, despite many of these having similar or analogous issues as those he consider in WPQ.

467. It is also disconcerting that he did not attempt to address why his prognostication that the issues he addresses in this part of his witness statement would result in recommendations for EA rejection, when no complete EA application in Nova Scotia in the period 2000-2016, other than WPQ, has ever been rejected, despite many of these having similar or analogous issues to those he considers in the WPQ application.

Discussion

468. Contrary to Dr. Blouin's opinion that the JRP "made a number of findings in furtherance of its provincial mandate which provided a reasonable basis for a recommendation that the Whites Point Project should be rejected",[252] for the reasons set out below, I conclude these speculations that cast doubt upon approvability under the NSEA are not well founded.

469. Dr. Blouin's analysis of environmental effects in the Nova Scotia EA regime, are contained in Part IVB of his Expert Report, paragraphs 49-103.

470. He first considers "bio-physical effects" and considers that the most significant concern of this nature relates to the impact of the project on endangered marine mammals, such as right whales and on lobsters.[253] He then considers the issue of ballast water and how that could be of significance to the spread of invasive species which, in turn, would affect the fishery industry.[254]

471. With respect to his assertions concerning impacts on right whales, please refer to the comments I made earlier in this Reply Expert Report regarding this subject. These comments are applicable to Dr. Blouin's comments on this topic as well as Ms. Griffiths'.

472. In any event, Dr. Blouin has not explained why his concerns about the effects on right whales should be accepted by this Tribunal when the very same concerns were raised in the consideration of the approval by Nova Scotia and Canada of the much larger BPQ project in 2016. Right whales were in the study area associated with Black Point Quarry and that project would bring 100% more shipping with it to service that quarry. Yet Nova Scotia approved BPQ, with the full support of Canada.

473. Further, he does not acknowledge many of the mitigation measures proposed by Bilcon were similar to the mitigation measures proposed and accepted by BPQ.

474. Dr. Blouin's concerns with regard to invasive species associated with ballast water handling are also not well founded, for reasons I have described above.

475. Further, he did not consider that BPQ was approved by Nova Scotia as well as by Canada. Both governments relied on the efficacy of the Ballast Water Regulations, even though the BPQ would generate 100% more aggregate shipping per year than WPQ, which in turn would transport

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[252] Blouin Report, para 12.

[253] *Ibid.*, paras. 52-64.

[254] *Ibid.*, paras. 65-66.

potentially many times more invasive species to an area in Nova Scotia that also has an important fishery.

476. Fundamentally, his opinion in paragraph 67 of his expert report is manifestly unreliable: “[T]he JRP’s finding of a potential adverse environmental effect here [regarding invasive species and lobsters] would have been reasonable and would not, in my view, have supported a recommendation to approve the project.” The same concerns were raised in BPQ but Nova Scotia, as well as Canada, determined these issues would not impact BPQ’s approvability.

477. Dr. Blouin then turns his attention to the Terrestrial Environment, “Surface Water, Coastal Wetland and Groundwater”, in paragraph 68-79 of his expert report. He provides no reasonable basis for his opinion that the quotations he references from the JRP’s report would affect the approvability of the project by Nova Scotia, assuming that the province did not treat the WPQ project any differently than it treated other quarries and projects where the same issues were present, as these other projects were approved using standard terms and conditions.

478. Dr. Blouin does not consider that there are well-understood ways to mitigate the impacts that he is referencing. He also does not specifically reference how, in the consideration of other quarries for EA approval in the province, the Nova Scotia Environment Department has consistently applied terms and conditions in the EA approval that would ensure that these effects are prevented from arising.

479. Dr. Blouin also does not reference how officials from the Nova Scotia government and the federal government testified as to why these issues were not of concern, in the sense that they could all be dealt with appropriately, either through mitigation measures that Bilcon had committed to apply or by terms and conditions that would be routinely imposed.

480. Dr. Blouin only selectively quotes from or references critiques offered by certain officials without considering that, in the totality of the submissions provided by the officials of those agencies, the JRP had been informed that they did not have an ultimate concern about these issues, since Bilcon would be called upon to implement appropriate mitigation measures and since the officials told the JRP that they would ensure these measures would be imposed by way of terms and conditions as in the standard practice of Nova Scotia.

481. Dr. Blouin, in paragraph 81 of his expert report, turns to the topic of potential socio-economic effects and he then proceeds to highlight select aspects of the JRP report, which he considers to have identified “adverse socio-economic effects arising from changes to the environment

caused by the project", of which the most significant, in his view, relate to "local fisheries, tourism and reasonable enjoyment of life and property".

482. Just as potential impacts to fisheries were mitigated in the Keltic Petroleum LNG Terminal, the Aguathuna Quarry and Marine Terminal, the BPQ project and the Fundy Tidal Project, WPQ's mitigation measures, which were entirely consistent with DFO recommendations, would have been accepted by a reasonable EA review.

483. Dealing first with Dr. Blouin's comments on the socio-economic concerns raised in relation to fisheries, he noted the JRP's questioning of the effectiveness of mitigation measures proposed by Bilcon, particularly the use of a call-in line to advise fishers of shipping schedules, "appear to have been supported by submissions of the LFA 34 Management Board". What Dr. Blouin does not recognize is that the particular measure that the JRP criticized in its report has indeed been recognized as a standard best practice.

484. Bilcon's EIS set out mitigation measures for potential effects to both intertidal and nearshore fisheries. These mitigation measures included allowing local harvesters access to the coast, setting up ship lanes and having a wider approach/departure area in the vicinity of the marine terminal, providing a call-in line to provide advance notice of shipment schedules to fishers and compensating fishers for any lost gear or lobster traps.[255]

485. During the JRP Hearing, Bilcon reiterated its commitment to provide compensation to lobster fishers:

> "I think we certainly want to resolve the issue with fishermen, but I think that the company does, in fact, have riparian rights, which is an entitlement to bring a vessel, a boat, into the shore. And I think what we need to do is find out how we can best operate with minimum losses to lobster fishermen and to establish a reasonable regime where we can compensate for those losses.
>
> . . .
>
> I think that we would like to be seen as a good corporate citizen, and we would like to sit down and negotiate something which is fair and reasonable to both sides."[256]

486. Fisheries, aquaculture and resources harvesting were also issues in the Keltic, Aguathuna, the BPQ and the Fundy Tidal projects.

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[255] Bilcon EIS, Chapter 9.3.12-9.3.13, pp.90 and 95 **(C-001)**.

[256] JRP Hearing Transcript, Volume 8, (June 25, 2007) at pp. 1690:19-17; 1691:3-6 **(C-161)** (emphasis added).

487. In the Keltic Project, Dr. Blouin took a positive and concrete approach to fisheries issues by requiring conditions such as the following:

> "That the Proponent complete a more detailed examination of the potential impacts on the salmon migration corridor and the impacts of the Meadow Lake alterations on this corridor prior to the issuing of any permits, with the results to be reported to NSDEL and DFO."

488. It is somewhat surprising that Dr. Blouin accepts the JRP doubts as to the effectiveness of the call-in line for fishers despite the fact that his Panel in the Keltic project made a similar recommendation:

> "5.9.5.4 That the Proponent develop a detailed communications plan for fishers, and all other boaters and recreational users in relation to shipping traffic, and consideration be given to consulting with Transport Canada to establish a Harbour Master office to ensure safe and timely passage."[257]

489. I note in particular that the detailed communications plans for fishers proposed by Dr. Blouin's Keltic Panel is comparable to Bilcon's proposed "call in line" that would advise fishers when ships were scheduled to arrive at the WPQ terminal. Although the WPQ JRP believed that the mitigation strategy "would not be technically feasible, given the nature of fishing activities",[258] it is evident that Dr. Blouin and the Nova Scotia Environmental Assessment Board accepted just such an approach.

490. In BPQ, Federal approval was given to the project subject to conditions concerning fish and fish habitat. For example, the proponent was required to develop fish habitat offset plans in consultation with DFO:

> "The Proponent shall develop and implement any required offsetting plan related to the loss of fish and fish habitat associated with the carrying out of the Designated Project in consultation with Fisheries and Oceans Canada, local commercial fishers and Indigenous groups. The Proponent shall develop the offsetting plan prior to construction. The plan shall identify the timelines for reporting the results of the offsetting activities to Indigenous groups and local commercial fishers."[259]

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[257] Estrin First Report, at para 404; Report and recommendations to the Nova Scotia Minister of Environment and Labour, Nova Scotia Environmental Assessment Board full review of the Keltic Petrochemical's Inc. proposed LNG and Petrochemical plant facilities, Goldboro, Nova Scotia, Environmental Impact Assessment, Final Report (February 21, 2007), p. 9 ("Keltic Panel Report") available at: http://www.gov.ns.ca/nse/ea/kelticpetro/KelticEABReport.pdf **(C-570)**.

[258] WPQ JRP Report **(C-034)**, p. 76.

[259] Environment Canada, "Decision statement issued under section 54 of the Canadian Environmental Assessment Act, 2012 for Black Point Quarry" (26 April 2016), online: http://www.ceaa-acee.gc.ca/050/documents/p80064/114133E.pdf at 7, s 3.3. (**Found at Appendix F of this Report) (C-1333)**.

491. Bilcon's fisheries mitigation measures were also similar to the mitigation measures proposed for the BPQ. For example, the following mitigation measure proposed by the proponent in BPQ can be regarded as similar to Bilcon's "call-in line":

> "The quarry site office will be manned 24 hrs/day so that fishermen can telephone to receive information regarding vessel arrival and departures. The phone number can also be used to report loss or damage to gear caused by Project-related vessel traffic."[260]

492. The Agency in BPQ also recommended that the proponent "Design marine vessel transportation routes in consultation with local fishers to optimize the avoidance of vessel traffic within current shrimp trap areas (generally 40 fathoms and deeper) to the extent that it would be safe."[261] Similarly, in WPQ, Bilcon proposed to define vessel approach/departure course in consultation with local fishermen.[262]

493. Further, Condition 3.3 of the federal Decision Statement in BPQ stipulated:

> 3.3 The Proponent shall develop and implement any required offsetting plan related to the loss of fish and fish habitat associated with the carrying out of the Designated Project in consultation with Fisheries and Oceans Canada, local commercial fishers and Indigenous groups. The Proponent shall develop the offsetting plan prior to construction. The plan shall identify the timelines for reporting the results of the offsetting activities to Indigenous groups and local commercial fishers.[263]

A similar condition could have been imposed by a reasonable EA reviewer if it had any outstanding concerns about Bilcon's efforts to consult with the relevant parties.

494. In fact, the proponents in the Fundy Tidal Energy Demonstration Project and BPQ each proposed the same communication measures to mitigate disruption to the fisheries.[264] The proposal to set up communication measures was accepted in both projects, thereby demonstrating that such measures were indeed standard practice. As such, a reasonable JRP, adopting the standard practice of assessing impacts to commercial fishing, would have found Bilcon's proposed mitigation measure to set up a call-in line to be acceptable.

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[260] BPQ EIS, Part 4, Table 10-1 at p. 26 **(C-1340)**.

[261] BPQ EAR, at p. 121 **(C-1331)**.

[262] WPQ Responses, Chapter 8.1, Table 3.15 at p. 40 **(C-634)**.

[263] Decision Statement Issued under Section 54 of the Canadian Environmental Assessment Act, 2012, Black Point Quarry Project, April 26, 2014, available at: http://www.ceaa-acee.gc.ca/050/documents/p80064/114133E.pdf (**Found at Appendix F of this Report) (C-1333)** (emphasis added).

[264] AECOM, Environmental Assessment Registration Document – Fundy Tidal Energy Demonstration Project (June 2009) at p. 191 online: http://www.novascotia.ca/nse/ea/minas.passage.tidal.demonstration/Minas_EA_Report.pdf Vulcan Materials Company, "Black Point Quarry Environmental Impact Statement" (February 2015), online: http://www.ceaa-acee.gc.ca/050/document-eng.cfm?document=101243, Part 3, Section 7.15.5.1 at p. 147**(C-1340)**.

495. Dr. Blouin also highlights concerns about the introduction of invasive species on fisheries and how there was concern from the LFA 34 Management Board as to what it considered to be a high risk of invasive species.

496. But Dr. Blouin does not consider that the concerns of the LFA 34 can be compared to concerns raised about invasive species in the BPQ environmental assessment. In BPQ, one environmental group raised the concern that "ballast water exchange is far from perfect in terms of preventing the introduction of species". Nevertheless, the CEA Agency in BPQ dismissed the concern noting that, "compliance with Transport Canada's Regulation would effectively mitigate potential effects and the likelihood of those effects". Notably, Dr. Blouin did not consider these highly important conclusions of the CEA Agency.[265]

497. With respect to the project's potential effects on tourism, Dr. Blouin noted that while the JRP did not expressly find significant adverse environmental effects with respect to tourism, he opines that concerns related to the potential impacts of the project on whale-watching activities, visual and aesthetic impacts of the large quarry and the loss of the reputation of Digby Neck as a picturesque tourism destination could lead collectively to a long-term effect on the local tourism industry.[266]

498. The JRP was also relatively critical of Bilcon's efforts to mitigate effects to tourism by having a tourism representative on the Community Liaison Committee (CLC). The JRP dismissed this strategy as follows:

> "Given the Panel's views on the effectiveness of the CLC, described elsewhere, the proposed mitigation is likely to be ineffective. Hence, no mitigation was considered. The Proponent offered to work with tourism officials to monitor potential effects, but proposed no strategy to do so."[267]

499. Bilcon, however, had commissioned extensive studies in an effort to understand WPQ's potential effects upon tourism so as to develop robust mitigation measures. As Paul Buxton related in his Supplemental Witness Statement:

> "Bilcon appreciated the fishing industry, eco-tourism and cultural concerns of Digby Neck residents and conducted no less than 20 different studies relating to these issues, to

[265] See BPQ EAR **(C-1331)**.

[266] Anthony Blouin Expert Report, dated June 9, 2017 at para. 9.

[267] WPQ JRP Report **(C-034)**, p. 78.

> ensure that there was minimal impact on marine and terrestrial habitat and socioeconomic and cultural elements in the community."[268]

500. Based on this extensive research, Bilcon identified that one of the key concerns regarding tourism was aesthetics, and the potential view of the quarry from neighbouring properties and the bay (*e.g.*, the view from whale watching vessels). Therefore, in addition to suggesting that a tourism representative be a member of the CLC, Bilcon's proposed a coastal preservation/buffer zone to maintain a natural coastline for tourism as follows:

> "The majority of the coastline of the quarry site will be maintained in its natural state with an environmental preservation zone. Along the coast, expanded preservation zones are proposed at sensitive areas. This zone will provide some visual buffer along the coast. Since the quarry will be developed in increments, the land south of Whites Cove Road along the Bay will remain undisturbed for many years. The land north of Whites Cove Road will be initially developed with the construction of environmental control structures. This area is also the first priority for reclamation, especially inland from the coast between the environmental preservation zone and the sediment retention ponds berms."[269]

501. Nova Scotia Department of Tourism, Culture and Heritage officials also contemplated that mitigation measures could help address potential impacts to tourism:

> "So, as such, we suggest the Proponent mitigate and monitor any potential impact on whales by working with experts and stakeholders in those fields. We also suggest that the Proponent work with local boat tour operators to mitigate any potential impact on their operations, and most importantly, the visitors experiences."[270]

502. Although the JRP did not consider the preservation zone to be a mitigation measure for addressing WPQ's potential impacts to tourism, it is clear that a buffer zone strategy had been accepted by NS Environment as acceptable mitigation in the Sovereign Resources Quarry Expansion, which was approved by Nova Scotia Environment two years before the WPQ JRP hearing.[271] In that quarry EA project, potential aesthetic and tourism impacts were not a bar to approving the EA. Instead, Nova Scotia Environment used conditions of approval to require quarrying within a specified area and also required that a buffer zone be maintained, similar to the buffer and preservation zone proposed by Bilcon for WPQ:

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[268] Paul Buxton Supplemental Witness Statement, at para 33.

[269] Bilcon EIS, Chapter 9.3.14, p. 105 (C-001) https://www.novascotia.ca/nse/ea/whitespointquarry.eis.asp.

[270] NS Department of Tourism, Culture and Heritage submission to JRP, JRP hearing, vol. 8 at p. 1741:3-8 **(C-161)** [Darlene MacDonald, Manager of Tourism Development and Tourism Division, NS Tourism, Culture and Heritage, NS Department of Tourism, Culture and Heritage].

[271] NS Department of Environment, "Sovereign Resources Quarry Expansion Project Overview" (2005) http://www.novascotia.ca/nse/ea/sovereignquarry.asp. **(C-1440)**.

> "Visual Environment
>
> 10.1 The Proponent shall not quarry beyond the 50 metre contour, as committed to in the EA Registration Document.
>
> 10.2 The Proponent shall maintain the undeveloped forested lands between the quarry and Lake William as a buffer zone for the duration of the quarry."[272]

503. Dr. Blouin's hypothesis that tourism and visual issues would affect approvability is problematic from two aspects. Firstly, his hypothesis ignores environmental assessment legal requirements. It assumes that it would be appropriate for a JRP to recommend rejection of a project despite the absence of findings of adverse effects. His hypothesis, in effect, dismisses the significance and relevance of a finding of "adverse effect". Yet, when it is supports his argument, he then seeks to rely on the JRP's findings of "adverse effects" to argue that the project would not have received approval in the absence of the NAFTA breaches found by the Arbitral Tribunal to have occurred.

504. Secondly, his hypothesis does not take into account the fact that similar concerns raised in other projects were either dismissed or addressed by way of terms and conditions. It is notable that many of the concerns raised by members of the public in BPQ are very similar to those highlighted by Dr. Blouin.

505. It is noteworthy that in BPQ impacts on tourism and recreation also existed. The Agency noted, "the visual impact of the marine terminal would extend beyond the life of the Project because, although aspects of the terminal may be dismantled, the terminal itself would likely remain in place upon closure and thus some of its effects would be irreversible".[273] (emphasis added)

506. For example, the BPQ Environmental Assessment Report provides at page 72:

> "A member of the public who has visited the Project area as a tourist expressed concern about potential changes to the environment as a result of the Project. Another member of the public disagreed with the proponent's measurements of the distance between the Project and Seabreeze Campground and Cottages; indicating that the actual distance was approximately 1.5 kilometres by road, and less than one kilometre "as the crow flies". The individual stated that effects of the Project would result in the loss of summer jobs and a decrease in property value. Furthermore, the individual stated that noise from the quarry would travel greater distances than those predicted by the proponent due to its

[272] NS Department of Environment, "Terms and conditions for Environmental Assessment Approval of Sovereign Resources Quarry Expansion/Modification" (29 August 2005), online: http://www.novascotia.ca/nse/ea/sovereignquarry/Sovereign_Conditions.pdf [Estrin First Expert Report, Appendix L] at 6, s. 10 **(C-569)**.

[273] BPQ EAR, at p. 73 **(C-1331)**.

> location by the water. The proponent verified the distance to Seabreeze Campground is greater than two kilometres, as shown on Figure 1." (Emphasis added)

507. It is also noted in the BPQ EA Report that an environmental group "indicated that residents have expressed concern about the economic impacts of the Project (*i.e.*, lost opportunities for tourism, conservation and other resource industries)".[274]

508. Beyond those mentioned in the EA Report, there was also concern about the project's potential impact on the opportunity for Guysborough County to develop a sustainable tourism industry. The individual raising the concern noted that the county has been the site of significant private sector investment in the tourism sector in recent years and that there was "strong potential for Guysborough to attract future inward investment and achieve considerable tourism success with an aligned economic development strategy" and that the environmental impact of the proposed quarry could detract from the success of future strategies.[275]

509. Notwithstanding such concerns, the BPQ project was granted EA approval in 2016 by both Canada and Nova Scotia, recognizing that with the implementation of mitigation measures "the project is not likely to cause significant effects on tourism and recreation".[276] Yet Dr. Blouin fails to consider how mitigation measures could be applied as were applied in BPQ; he fails to make reference to the fact that his concerns on that issue did not affect the recommendation by the expert CEA Agency for BPQ approval; nor did these concerns impede the Nova Scotia Environment Minister from approving the EA for that project. In other words, these issues did not affect approvability in this most recent and larger comparator quarry. Thus it is unreasonable for Dr. Blouin to speculate to the contrary without any consideration of those factors.

510. The third socio-economic effect that Dr. Blouin raises as a concern is the project's impact on "the reasonable enjoyment of life and property." Dr. Blouin takes the position that "if the JRP had not adopted the approach that it did in breaching NAFTA, it would still be both a reasonable and probable outcome for the JRP to find that the project would likely have an adverse effect on local residents' reasonable enjoyment of life and property because of direct impacts of quarrying

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[274] BPQ EAR, at p. 72 (**C-1331)**.

[275] Letter of concern – Black Point Quarry Project, Response to Access to Information Request p.187, from member of the public to CEA Agency dated March 31, 2014 [NSE p. 187 (pdf), Tab 9] **(C-1441)**.

[276] BPQ EAR, at p. 73 **(C-1331)**.

activities such as traffic, dust, vibration, and noise, as well as potential groundwater impacts to wells."[277]

511. It is notable that the approach taken by Dr. Blouin in his expert report differs starkly from the approach he took as Chair of the Panel in the Keltic LNG project. In Keltic, concerns similar to the examples cited by Dr. Blouin in his expert report were also present. For example, under section 5.2.3 ("Identified Concerns") of the Keltic Panel's report, the following concerns were noted:

> "The Concerned Citizens of Lincolnville is in opposition to the Keltic project for the reasons of destruction of heritage sites and the planned placement of waste into a landfill site which we are seeking to remove from our backyard
>
> "There are so few spaces left on earth that are not hugely industrialized, so few coastal zones as quiet as the Eastern Shore
>
> "The assessment does not include the loss of value for residential properties next to site, nor rising property taxes and insurance costs. Thus the analysis is misleading to imply that rising property values are indicative of a positive change in the lives of the current residents
>
> "The actual negative impacts, potential impacts and overall environmental alterations all up to a price that is too high to pay".

512. Yet, in the Keltic LNG project, Dr. Blouin did not place the same amount of emphasis on such concerns as he does with respect to the similar issues in WPQ. In Keltic these issues were essentially dismissed or addressed through recommendations such as the following:

- the Proponent contribute resources to recreational and social opportunities, primarily for its workforce, that could be turned over to the local authorities in order to reduce the burden on local authorities for similar amenities;[278]
- the Proponent continue to work with local communities, unions and education/training institutions to ensure that the types of skills required are clearly understood; that the proponent provide financial incentives to encourage local persons to undertake the necessary training; and that the Proponent adopt a policy to give priority to hiring qualified local workers;[279]

[277] Blouin's Expert Report, at para. 104.

[278] Keltic EA Board Report, p. 5 **(R-513)**.

[279] *Ibid.*

- the Proponent develop and Equal Opportunities Employment Strategy that ensures employment opportunities for under-represented groups such as women, visible minorities and persons with disabilities.[280]

513. Dr. Blouin's assessment of WPQ's impact on the "reasonable enjoyment of life" is not consistent with the standard approach ordinarily used to assess this criteria in environmental assessments. The examples he quotes in support of his view fall within the definition of "community core values", albeit expressed in different words.

514. In his witness statement, Dr. Blouin noted:

- The panel also held that "[n]oise, dust, light and traffic would disrupt the life residents have come to know and love in the Digby Neck and Islands [at para. 97];

- "During the assessment, various participants noted that the planning documents for the local communities emphasized traditional industries such as fishing and tourism. They did not contemplate large-scale resource extraction as a desirable industrial development for the area" [at para. 101];

- "The changes with respect to noise, dust, light, and traffic were factors that could constitute an adverse environmental effect" [at para. 102]. (emphasis added)

515. Dr. Blouin's references to the abovementioned findings of the JRP clearly falls within the scope of "community core values" as they relate to value judgments and beliefs about a particular way of life. The nature of the JRP's findings that Dr. Blouin cites as falling within the term 'reasonable enjoyment of life and property' is clearly a variant of "community core values" and this is evident when read against the JRP's finding at page 100 of its report, which states:

> "The Panel considers the community's core values to be a Valued Environmental Component, as important to the broader ecosystem as any other part of the environment. From the body of accumulated evidence, the Panel concludes that the implementation of the proposed Whites Point Quarry and Marine Terminal complex would introduce a significant and dramatic change to Digby Neck and Islands, resulting in sufficiently important changes to that community's core values that warrant the Panel describing them collectively as a Significant Adverse Environmental Effect that cannot be mitigated." (emphasis added)

516. Indeed, this Tribunal observed at paragraph 506 of the Award on Jurisdiction and Liability:

> "The meaning of "community core values" is unclear from the JRP Report. There are at least four possible interpretations of "community core values" as used by the JRP, and the Tribunal will review the legal and factual tenability of each of them. The Tribunal is satisfied that even if these four interpretations were to be viewed as less than entirely

[280] *Ibid.*

> exhaustive of what the JRP had in mind, they do, individually or in combination, reflect in at least large measure the JRP's intended meaning." (Emphasis added)

517. Further, while Dr. Blouin does makes reference to environmental effects, it is important to note that in all cases he reference at paragraphs 97 of his expert report, these are not actual environmental effects but only matters in respect of which that the Panel found a "risk" that they might occur:

- The panel found that the risk of loss of groundwater was "an adverse environmental effect that would continue long after the project concluded". (at para. 97)
- "The JRP was concerned that the aggregate fines would likely become windborne and could present a serious risk of adverse environmental effects on human receptors; it was of the view that '[a]ppropriate modelling of the dispersion patterns of these very fine particles in local wind conditions would be necessary to quantify the distance and directions these particles could travel.'" (at para. 102)

518. His use of the word "threat" of such impacts appears to be consistent with the "fears" and "speculations" of the WPQ JRP about a whole range of its concerns about the project.

519. Importantly, however, an "adverse effect" as defined by the *Nova Scotia Environment Act* does not include a "risk" or "threat" of "adverse effects" nor does the definition of "adverse effect" include effects to "future environmental, social and cultural conditions".

520. Rather, "adverse effect" is defined as "an effect that impairs or damages the environment, including an adverse effect respecting the health of humans or the reasonable enjoyment of life or property".

521. There are no words within that definition that would permit the Minister to base his decision on a "risk" or a "threat"; instead, the definition requires that he objectively determine that there will be "an effect that impairs or damages the environment . . .".

522. The definition of "adverse effect" means an actual effect, not a "risk" or a "threat" of one. The need for an actual effect is discernible when contrasted with the definition of "environmental effect," which is defined to mean "any change, whether negative or positive that the undertaking may cause in the environment . . .".

523. There is a significant difference between something that is a risk, "may result" in an environmental effect, on the one hand, and an "adverse effect" which must be one that is happening, *i.e.*, it is one that "impairs or damages the environment".

524. Further in referring to such matters, Dr. Blouin does not acknowledge that none of the Nova Scotia officials who appeared before the JRP submitted that environmental effects could not be mitigated or that there would be an adverse effect on “reasonable enjoyment of life and property”.

525. It is not surprising that no Nova Scotia official took such a position as these effects were typically encountered in quarry environmental assessments across the province and usually have been dealt with by way of terms and conditions. As mentioned elsewhere in my report, the JRP was advised that effects on groundwater would be addressed under the Part V approval process. The JRP’s concern for appropriate modelling on the dispersion patterns of windborne aggregate fines would also have been addressed by standard terms and conditions in Nova Scotia’s EA approvals, which require proponents to submit air and dust monitoring plans. In fact, many of these standard terms include an additional requirement that require proponents to “make modifications to mitigation plans and/or quarry operations to prevent continued unacceptable environmental effects to the satisfaction of NSEL”.[281]

526. Moreover, public concerns related to noise and dust could also be addressed by requiring, as a condition of approval, that the proponent provide “details of a complaint resolution program whereby public concerns are tracked and resolved in a satisfactory manner”, as was done in the Elmsdale Quarry Expansion Environmental Approval.[282]

527. In the Sovereign Resources Quarry Expansion project, the public raised concerns including blasting, vibration and noise, dust emissions, viewshed impacts and water quality effects. Nevertheless, the Sovereign Resources Quarry Expansion project was ultimately approved, subject to several terms and conditions, including a condition that addressed “proximity to residents and public involvement”:

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[281] See for example: Environmental Assessment Approval, Elmsdale Quarry Expansion, July 24, 2007, Condition 7.1(a), available at: http://www.gov.ns.ca/nse/ea/elmsdalequarryexpansion/ElmsdaleQuarryExpansionConditions.pdf; **(R-109)** see also:

Environmental Assessment Approval, Rhodena Rock Quarry Expansion, April 18, 2006, Condition 8.1, available at: http://www.gov.ns.ca/nse/ea/porcupinequarryexpansion/PorcupineQuarryExpansion_Conditions.pdf **(found at Appendix N of David Estrin’s 2011 Report.)**

Environmental Assessment Approval, White Rock Quartz Mine, September 2, 2002, Condition 9.3, available at: http://www.gov.ns.ca/nse/ea/bbullwhiterock2/bbul2toc.pdf **(C-1437)**

Environmental Assessment Approval, Black Point Quarry Project, April 26, 2016, Condition 6.2, available at: https://novascotia.ca/nse/ea/black-point-quarry/Decision.pdf **(Found at Appendix G of this Report) (C-1430)**.

[282] Environmental Assessment Approval, Elmsdale Quarry Expansion, July 24, 2007, p. 3, Condition 7.1(d) available at: http://www.gov.ns.ca/nse/ea/elmsdalequarryexpansion/ElmsdaleQuarryExpansionConditions.pdf **(R-109)**.

4.0 Proximity to Residents & Public Involvement

4.1 The Proponent, as part of the application for amendments to the Part V Approval under the Environment Act, shall provide for review and approval:

a) A complaint resolution program to be developed in consultation with NSEL.

b) Outline of the pre-blast survey to be conducted on all structures within 800 metres of the blast site.

4.2 The Proponent shall maintain the existence of the Monitoring Board during the life of the project.

528. During the environmental assessment phase of the White Rock Quartz Mine project as well, public concerns expressed included concerns about truck traffic, the size of the mine, watercourse management, dust control and stockpile locations. Condition 8.0 of the White Rock Quartz Mine EA approval provided a fairly detailed framework for public consultation and even required the proponent to implement a “Dispute Arbitration Process and Policy” to address all concerns. The wording of the condition is set out below:

8.0 Public Consultation

8.1 The Proponent shall form a Community Liaison Committee (CLC) in consultation with the NSDEL and with county and community leaders. The NSDEL Guidelines for the Formation of a Community Liaison Committee (see attached) shall be used for the guidance of the Proponent and community.

8.2 The Terms of Reference shall describe the CLC’s degree of participation in, but not necessarily limited to, the following:

a) trucking routes and schedules;

b) noise and dust control measures;

c) blasting plans;

d) reclamation plans; and

e) review of environmental monitoring and testing data and associated environmental reports submitted to the appropriate government departments and agencies.

> 8.3 The Proponent shall implement a Dispute Arbitration Process and Policy to address all concerns that arise during the operation and reclamation of this undertaking.[283]

529. As noted above, the Highway 104 Environmental Assessment was another project for which Dr. Blouin chaired a public hearing of the Nova Scotia EA Board. During the hearing process, the Panel heard concerns related to a wide array of environmental and socio-economic topics, including:

- Atmospheric concerns, including air quality and noise;
- Groundwater resources;
- Fish and Fish Habitat;
- Rare Herpetiles, Mammals, Bird and Plants;
- Wetlands;
- Local Economy;
- Land Use;
- Archaeological and Heritage Resources; and
- Transportation Infrastructure.[284]

530. These topics were considered in the Environmental Assessment Report, prepared by Jacques Whitford Consulting Limited.

531. In its EA Report, the local economy was described as a Valued Socioeconomic Component (VSC) due to its "importance to the community of Antigonish and quality of life for its residents".[285]

532. Construction of the new segment of Highway 104 was intended to result in a circumvention of the Town of Antigonish. The old Highway 104 was located adjacent to a number of local businesses and homes, and provided more direct access to the Town of Antigonish; construction of the new Highway 104 would directly affect 88 establishments along the old Highway 104.

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[283] Environmental Assessment Approval, White Rock Quartz Mine, September 2, 2002, Condition 9.3, available at: http://www.gov.ns.ca/nse/ea/bbullwhiterock2/bbul2toc.pdf (**C-1437)**.

[284] NSEAB, Report and Recommendations to the Minister of Environment and Labour for The Environmental Assessment Highway 104 at Antigonish, August 2005. **(C-1432)**.

[285] Jacques Whitford, Final Draft Report: Highway 104 at Antigonish, (April 2005) at p.188, available online: http://novascotia.ca/nse/ea/highway104/hy104_eareport.pdf. **(C-1442)**.

These establishments included 32 homes, 8 gas stations, 12 small businesses and 6 restaurants.[286]

533. The EA Report ultimately concluded that several commercial establishments along the old Highway 104 would be adversely affected by the traffic diversion. However, the EA Report also stated that these effects could be reduced through application of mitigative measures.[287]

534. For the Highway 104 project Dr. Blouin was willing to accept these effects on the local economy could be mitigated. Unlike the JRP in WPQ, which was not willing to consider mitigation measures suggested by government officials, his Highway 104 Panel took into account mitigation measures suggested by the proponent and government officials.

535. Importantly, the Panel in Highway 104 noted at page 35 of its report that the project would disproportionately affect one individual (James Dunn). The Panel stated:

> It is also recognized that the Dunn property occupies a very strategic location in relationship to the proposed new highway alignment. Accordingly, it seems clear that the proposed new highway will bring significant adverse effects to bear on this property, particularly if the crossing of the existing Highway 104 is constructed by overpass as currently proposed.
>
> The Panel also recognizes that a number of additional properties will be similarly affected, although perhaps generally not to the same degree.
>
> The Panel concurs that the mitigation measures proposed by the proponent in reference to adjacent land uses and users are reasonable. However, in the case of the Dunn property, and any other adjacent properties where major adverse effects can be anticipated, it is the Panel's opinion that all reasonable efforts should be made to mitigate these effects and, if possible mitigation is found to be insufficient, to provide reasonable compensation." (emphasis added)

536. Dr. Blouin's Panel then provided the following recommendations, demonstrating that, even where there was unequivocal adverse effects on property owners, these effects could be mitigated through "reasonable measures" or compensation:

> "1) That, in the event that a final decision is taken for the new highway to cross the existing Highway 101 by means of an overpass, that the proponent take all reasonable measures to mitigate impacts on affected lands including the Dunn property and, in cases in which mitigation proves insufficient, that the proponent consider appropriate compensation.

[286] *Ibid.,* at p. 192.

[287] *Ibid.,* at p. 205.

> 2) That all adjacent property owners, where major adverse effects can be anticipated, be dealt with according to the same standard (i.e. as in the immediately preceding Recommendation."

537. Dr. Blouin's approach to evaluating these types of effects in the Keltic and Highway 104 projects is in sharp contrast to the approach he has advocated in his report. In these two Nova Scotia EA public panel hearing reviews that he has chaired, he did not hesitate in finding that these effects could in fact, be mitigated.

538. In summary, many of what Dr. Blouin describes as socio-economic effects or factors that would have led to a negative recommendation from the JRP in the absence of CCV were not unique to WPQ. Had Dr. Blouin taken a consistent approach in his report, he would have been compelled to similarly consider the possibility of recommending appropriate mitigation measures as were called for in other projects.

539. Further, he did not point to a single other project that has been denied EA approval on the basis of public opposition or unacceptable socio-economic effects in Nova Scotia. Instead, as mentioned above, Nova Scotia's standard practice is to address public concerns through the use of terms and conditions. It is inconsistent for him now to imply that WPQ would be the first project to be denied approval for such reasons.

540. The Sydney Tar Ponds Project, Sovereign Resources Quarry Expansion Project and Miller's Creek Surface Gypsum Mine Extension are instructive in assessing how a JRP, or other EA reviewers acting reasonably, could have required mitigation of potential community impacts in WPQ.

541. The Bilcon EIS proposed to mitigate the effects on the community through the Community Liaison Committee:

> "To ensure adjacent property owners concerns are resolved, public participation is proposed to continue during construction and operation of the quarry. Bilcon of Nova Scotia Corporation intends to re-establish the Community Liaison Committee (CLC) that was established as a result of the permitting of the 4 hectare quarry at the Whites Point site in 2002. In this regard, a neighbour adjacent to the quarry property will be invited to participate on this committee and be involved with a complaint process to be established by Bilcon so that public concerns regarding environmental matters are addressed in a timely manner and to resolve any quality of life effects."[288]

[288] Bilcon EIS, Chapter 9.3.22, p. 147 **(C-001)** https://www.novascotia.ca/nse/ea/whitespointquarry.eis.asp.

542. The JRP criticized Bilcon's outreach attempts:

> "Although the Proponent may have intended to create a consultative process, the Panel found little evidence that the EIS adequately addressed community concerns."[289]

543. Like the Panel in Whites Point, Ms. Griffiths' Panel in the Sydney Tar Ponds case also heard considerable criticism of the Community Liaison Committee proposed there, "particularly because certain stakeholders have not been allowed to participate". The Panel also noted comments that the "CLC should be more representative of the community as a whole and more independent" and the fact that some presenters had no communication with CLC members and as a result, did not feel that their interests were being adequately represented.[290] Yet, instead of doubting the effectiveness of the CLC, the Sydney Tar Ponds Panel, chaired by Ms. Griffiths, made the following recommendation:[291]

> "The Panel recommends that PWGSC [Canada] and NSEL require STPA [the proponent] to maintain its Community Liaison Committee and to modify the Committee's current terms of reference so that the appointment process is open and transparent, and that all key community interests are represented. The terms of reference should include a protocol to ensure that individual members will effectively relate to and report back to the people and organizations they represent, and should give the CLC a mandate to conduct its own community outreach activities during the Project. STPA should provide the CLC with sufficient resources to conduct its business and to report back to the community. The CLC should use an open forum such as a community meeting or open house at least once a year, and should also meet at least bi-annually with the Monitoring Oversight Board."

544. The Sovereign Resources Quarry Expansion EA (see Appendix L of my First Expert Report) was also approved by the Nova Scotia Department of Environment subject to conditions to develop a complaints resolution board, conduct pre-blast surveys and maintain a monitoring board:

> 4.1 The Proponent, as part of the application for amendments to the Part V Approval under the Environment Act, shall provide for review and approval:
>
> a. A complaint resolution program to be developed in consultation with NSEL.
>
> b. Outline of the pre-blast survey to be conducted on all structures within 800 metres of the blast site.

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[289] WPQ JRP Report **(C-034)**, pp. 70-72.

[290] Joint Review Panel Environmental Assessment Report: Sydney Tar Ponds and Coke Oven Sites Remediation Project (July 2006), at p. 139-140, available at: http://www.ceaa.gc.ca/050/documents/19345/19345E.pdf (**C-534)**.

[291] *Ibid.*, at pp. 139-140.

> 4.2 The Proponent shall maintain the existence of the Monitoring Board during the life of the project.[292]

545. Miller's Creek Surface Gypsum Mine Extension Project was another Nova Scotia quarry that was approved despite being embroiled in controversy over its potential community effects. Hon. Mark Parent, Nova Scotia Minister of Environment, was the same decision maker in both WPQ and the Miller's Creek Surface Gypsum Mine Extension. The Miller's Creek Surface Gypsum Mine Extension was registered for a provincial EA on February 21, 2008, just two months after WPQ was rejected in the joint federal-provincial EA process in December 2007.[293]

546. The Miller's Creek Surface Gypsum Mine Extension was opposed by community action groups, the Friends of the Avon River ("FAR") and Avon Peninsula Watershed Preservation Society ("AWPS"). Community project opponents that included FAR and AWPS asked Minister Parent to instigate an emergency comprehensive impact assessment of the complete Avon River Watershed. They were particularly concerned about the impact of the Miller's Creek Surface Gypsum Mine Extension due to many of the same issues that arose in WPQ, including potential effects to inner Bay of Fundy (iBoF) Salmon and species at risk:

> "Therefore we, (FAR) and the Avon Peninsula Watershed Preservation Society (APWPS), are writing today requesting that 'you' instigate an 'emergency comprehensive environmental impact assessment' of the complete Avon River Watershed, in order to obtain hard data on the remaining fish populations, the extent and quality of their 'critical habitat' (historically and today), and to identify and mitigate any 'stressors' (including lack of fish passage) shown to be detrimental not only to the 'endangered iBoF Atlantic Salmon' but also the American Eel and their 'critical habitats'. It is imperative the Fisheries Minister of Canada recognize the immediate concerns of our two groups as they pertain to fish and fish habitat. Two projects, which could both heavily impact endangered (and other) fish species and their 'critical habitats' within this iBoF watershed include not only the pending "Hwy. 101 Twinning Project", but, also recent concerns around the "Miller Creek Quarry Expansion Project" . . .
>
> The Fundy Gypsum Co., based in Hants County, NS is involved in a controversial issue with the APWPS regarding a mine expansion in a quarry located at Miller's Creek, Avondale very near St Croix River. The expansion was put on hold until April 2009, after a call for additional information was requested by 'then' Provincial Environment Minister, Mark Parent. (Current Dept. of Environment Minister, David Morse).

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[292] NS Department of Environment, "Terms and conditions for Environmental Assessment Approval of Sovereign Resources Quarry Expansion/Modification" (29 August 2005), online: http://www.novascotia.ca/nse/ea/sovereignquarry/Sovereign_Conditions.pdf [Estrin First Expert Report, Appendix L] at 3, s. 4. **(C-569)**.

[293] NS Environment, "Miller's Creek Notice of Registration of Undertaking for Environmental Assessment" (February 21, 2008) **(C-1443)**.

> The recent EA, conducted by Fundy Gypsum, has failed to address the impact potential that the proposed quarry project will have upon critical habitat(s) of both the St Croix and Kennetcook Rivers and of the entire Avon River Watershed (ARW). Sixteen different wetlands will be impacted, surface water and groundwater in the area will be affected and so will the 'species-at-risk'. Past Min. Mark Parent expressed particular concern about a lack of information surrounding the effects on fish and fish habitat. He said, 'a fish survey needs to be done in nearby Shaw Brook. The presence of fish could trigger the need for a federal environmental assessment'. We agree, but again this assessment needs to cover the entire ARW. (Atlantic salmon are slated for recovery by the IBoF Recovery Team in these listed 'rivers of concern').
>
> The Fundy Gypsum Company wants to open a 400-hectare quarry, and already have two quarries operating on the Avon Peninsula . . .
>
> We feel the long over-due 'comprehensive environmental impact assessment' is the only reasonable way your department can evaluate what it is going to take to save the important fish in our watershed."[294]

547. Similarly, Dr. David G. Patriquin, Professor of Biology at Dalhousie University, in his comments on the Fundy Gypsum EA registration document for the Miller's Creek Surface Gypsum Mine Extension, pointed out that the project had many potential negative impacts to sustainable livelihoods:

> "10. The elimination of sustainable livelihoods
>
> Finally, I would simply like to reiterate concerns expressed by many residents about the destruction of sustainable livelihoods by the mine.
>
> The mine would be, essentially, a death sentence for this lovely peninsula, its rich heritage, its farms and villages, its unique karst topography and the biodiversity this environment creates and sustains. More than that, it would eclipse the beginnings of a rural renaissance and a promising future.
>
> Because the effects of the gypsum mine would be both short term and very long lasting, the losses of alternative, sustainable communities and livelihoods that would result from a new mine must be considered. The Avon Peninsula is a largely unspoiled land with rich agricultural soils, salt marshes, forest and small communities. Its usual karst topography makes it exceptionally attractive and hosts unique assemblages of native plants and other wildlife. The farms include dairy, beef, fowl, certified organic market farms, orchards, a vineyard. There is tremendous potential for expansion of farming and cottage industries with direct marketing to the rapidly growing Halifax Regional Municipality. The area is also valued by artists, tourists, and, increasingly, ecotourists – for a long time it has been a favourite place to take botany classes and naturalist groups, or for individuals or groups to search for unusual species of snails, beetles and bats associated with the gypsum karst.

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[294] E-mail from Sonja Wood (Chair, Friends of the Avon River) to David Morse, Nova Scotia Minister of Environment dated 10 March 2009, Exhibit **(C-666)** at 2-3.

> The proposed mine would eliminate all of this – beauty, and livelihoods. Indeed, the activities since 2005, when Fundy Gypsum first made its intentions clear, have created widespread dissension and depression in the community. Is this the Nova Scotia of the future?"[295]

548. Despite the groundswell of opposition from environmental groups such as FAR and AWPS, Minister Parent did not find that these concerns should prevent approval of the project. Indeed, throughout the process, the Minister had little focus on such issues. When the Department of Environment requested additional information about the Miller's Creek Project, Raymond Parker, President of the Avon Peninsula Watershed Protection Society was disappointed that socio-economic concerns were not mentioned by the Minister:

> "It's certainly a significant decision; we're pleased that the minister has realized that the proposal is deficient. On the other hand, the minister has assured us in writing that socio-economic factors would be part of the EA so we're surprised and disappointed that his decision doesn't mention concerns in this respect."[296]

549. Subsequently, following consideration of the Focus Report, the Minister approved the project, the Minister indicating that, in his opinion, the terms of the approval reflected an appropriate response to socio-economic issues.

550. The Miller's Creek case illustrates the standard Nova Scotia EA approach to public concerns, *i.e.*, not to reject a project based on such issues. Rather, the standard approach, as demonstrated in Miller's Creek and other quarries such as BPQ, is to attempt to mitigate those concerns by imposing terms and conditions that address the effects of concern to members of the public. Such concerns have never been the basis to reject EA approval in Nova Scotia under applicable law. The Minister's decision to approve the Miller's Creek Surface Gypsum Mine Extension during the same period as WPQ and in the face of significant community opposition relating to the project's potential community effects further emphasizes that the typical and reasonable approach for a quarry, even a controversial one, is to approve the project with conditions.

551. The BPQ Project was also subject to public controversy, with opposition from several environmental and community organizations. In fact, there were several requests for a review

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[295] Letter from David G. Patriquin (Professor of Biology) to EA Branch of Nova Scotia – comments on Registration Document for Miller's Creek, (March 6, 2008) at 7. **(C-1444)**.

[296] Jennifer Hoegg, "Government asks for more study of Fundy Gypsum proposal" (March 17, 2008), online: *Hants Journal* <http://www.novanewsnow.com/Business/2008-03-17/article-596233/Government-asks-for-more-study-of-Fundy-Gypsum-proposal/1> **(C-1445)**.

panel to be established to assess the BPQ Project.[297] Moreover, BPQ involved an extra layer of community opposition due to the contentious expropriation of Fogarty's Cove, a beautiful 40 hectare area that had been owned by the Fogarty family for some 194 years.[298]

552. The Fogartys had little or no warning of this expropriation. In 2011, a Halifax lawyer offered to pay James Fogarty $15,555 for his share of the land and stated that the company was talking to the county about expropriation.[299] James Fogarty refused. Subsequently, in 2012, the municipality assured Fogarty that it was not going to expropriate the land. Then in October 2013, only six days before a municipal council meeting, James Fogarty was invited to speak to the council about the potential expropriation of his land. After Fogarty spoke for 10 minutes (without any questions being asked), the council voted unanimously to expropriate the land.[300] As the *Globe & Mail* reported:

> He [James Fogarty] watched council, with two lightning-quick votes, legally wrest away land that had been in the Fogarty name for 155 years. In exchange, dozens of Joseph's Fogarty's heirs became eligible to split $140,000 for a site that could be developed for many, many millions.[301]
>
> When split between 53 grandchildren, 89 great-grandchildren and eight great-great-grandchildren, the $140,000 will not amount to very much.

553. The Fogartys were especially concerned about non-pecuniary harm, such as the loss of family graves and historical foundations on the site, as well as harm to the cove's natural beauty. As such, the Fogartys fought to have the land declared a protected wilderness area.[302] The Fogartys

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[297] Compilation of BPQ comments obtained from FOI Request.

[298] Josh O'Kane, "Fogarty's Cove: Maritime legend, hard reality and a quarry that could change it all" (18 April 2016), online: *Globe & Mail* http://www.theglobeandmail.com/arts/music/fogartys-cove-maritime-legend-hard-reality-and-a-quarry-that-could-change-itall/article29641074/ **(C-1094)**.

[299] Eva Hoare, "Special report: Family fights to save storied Fogarty's Cove" (25 June 2014), online: *The Chronicle Herald* <http://thechronicleherald.ca/novascotia/1218315-special-report-family-fights-to-save-storied-fogarty-s-cove#.U6v4g2qAO0E.email> [Hoare, 2014] **(C-1341)**.

[300] Elizabeth Brubaker, "Corporate Bullying - Expropriating for private purposes in Nova Scotia" (18 September 2014), online: *Environment Probe* <http://environment.probeinternational.org/2014/09/18/corporate-bullying-expropriating-for-private-purposes-in-nova-scotia/> [Brubaker, 2014] **(C-1334)**.

[301] Josh O'Kane, "Fogarty's Cove: Maritime legend, hard reality and a quarry that could change it all" (18 April 2016), online: *Globe & Mail* http://www.theglobeandmail.com/arts/music/fogartys-cove-maritime-legend-hard-reality-and-a-quarry-that-could-change-itall/article29641074/. **(C-1094)**.

[302] Brubaker, 2014 **(C-1334)**.

and their supporters also opposed the BPQ quarry throughout the provincial and federal EA hearing process.[303]

554. Yet there was no demonstrable concern by EA reviewers (both federal and Nova Scotia) during the BPQ EA application process, despite the expropriation having such direct and immediate personal and family impacts.

555. In summary, potential community impacts that were raised in connection with projects analogous to WPQ were often accommodated by the EA reviewers (both federal and Nova Scotia) by means of imposing or recommending additional mitigation measures. This illustrates a standard approach to mitigating these impacts that could also have been used to mitigate WPQ's potential community effects, with the result that this would no longer have been an unresolved issue.

556. Unfortunately, Dr. Blouin has not considered the reality of Nova Scotia EA quarry approval practice in advancing his prognosticated approvability concerns.

DAVID ESTRIN
August 20, 2017

[303] Josh O'Kane, "Fogarty's Cove: Maritime legend, hard reality and a quarry that could change it all" (18 April 2016), online: *Globe & Mail* http://www.theglobeandmail.com/arts/music/fogartys-cove-maritime-legend-hard-reality-and-a-quarry-that-could-change-itall/article29641074/. **(C-1094)**.

Appendix A to Reply Expert Report of David Estrin

TABLES OF CONTENTS FROM CLASS I EA REGISTRATION DOCUMENTS FOR THREE NOVA SCOTIA QUARRY PROJECTS– SEABROOK QUARRY EXPANSION, ELMSDALE QUARRY EXPANSION PROJECT and NICTAUX PIT AND QUARRY DEVELOPMENT

CONFIDENTIAL

MUNICIPAL
ENTERPRISES LTD

MUNICIPAL ENTERPRISES LIMITED
SEABROOK QUARRY EXPANSION,
SEABROOK, DIGBY COUNTY, NOVA SCOTIA

**Registration Document for a Class 1 Undertaking Under Section 9 (1)
of the Nova Scotia Environment Assessment Regulations**

March 2016

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Appendix F Public Consultation Documentation

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Jacques Whitford

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Canada B3B 1W8

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FINAL REPORT

Environmental Assessment Registration, Elmsdale Quarry Expansion Project

GALLANT AGGREGATES LIMITED

PROJECT NO. 1013296.

Jacques Whitford

An Environment of Exceptional Solutions

Registered to ISO 9001:2000

2007

CONFIDENTIAL

PROJECT NO. 1013296

REPORT TO

Gallant Aggregates Limited
PO Box 10
Enfield, Nova Scotia
B2T 1C6

FOR

Environmental Assessment Registration
Elmsdale Quarry Expansion Project

June 29, 2007

Jacques Whitford
3 Spectacle Lake Drive
Dartmouth, Nova Scotia,
B3B 1W8

Phone: 902-468-7777
Fax: 902-468-9009

www.jacqueswhitford.com

Jacques Whitford

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ENVIRONMENTAL ASSESSMENT REGISTRATION

NICTAUX PIT AND QUARRY DEVELOPMENT PROJECT

WARD AGGREGATES LTD.

PROJECT NO. NSD18995

2005

CONFIDENTIAL

PROJECT NO. NSD18995

REPORT TO

WARD AGGREGATES LTD.

ON

ENVIRONMENTAL ASSESSMENT REGISTRATION
NICTAUX PIT AND QUARRY DEVELOPMENT PROJECT

Jacques Whitford Limited
3 Spectacle Lake Drive
Dartmouth, NS B3B 1W8
Tel: 902-468-7777
Fax: 902-468-9009

April 28, 2005

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Appendix B to Reply Expert Report of David Estrin

IRISH COVE QUARRY EXPANSION PROJECT – MINISTER'S ENVIRONMENTAL ASSESSMENT APPROVAL AND CONDITIONS (FEBRUARY 26, 2015)

CONFIDENTIAL

NOVA SCOTIA
Environment
Office of the Minister

PO Box 442, Halifax, Nova Scotia, Canada B3J 2P8 - www.gov.ns.ca/nse

FEB 2 6 2015

our file number:
47935

Gary Rudolph
Director of Aggregates
Municipal Enterprises Ltd.
927 Rocky Lake Drive
PO Box 48100
Bedford, NS B4A 3Z2

Dear Mr. Rudolph:

Re: Environmental Assessment – Municipal Enterprises Limited
Irish Cove Quarry Expansion Project, Richmond County, NS

The environmental assessment of the proposed Irish Cove Quarry Expansion Project in Richmond County, Nova Scotia has been completed.

This is to advise that I have approved the above project in accordance with Section 40 of the Nova Scotia Environment Act, S.N.S., 1994-95 and subsection 13(1)(b) of the Environmental Assessment Regulations, N.S. Reg. 348/2008, made under the Act. Following a review of the information provided by Municipal Enterprises Limited, and the information provided during the government and public consultation of the environmental assessment, I am satisfied that any adverse effects or significant environmental effects of the undertaking can be adequately mitigated through compliance with the attached terms and conditions.

This approval is subject to any other approvals required by statute or regulation, including but not limited to, approval under Part V of the Environment Act (Approvals and Certificates section).

If you have any questions regarding the approval of this project, please contact Peter Geddes, Director, Policy and Planning, at (902) 424-6250 or via email at Peter.Geddes@novascotia.ca.

Sincerely,

Randy Delorey, MLA
Minister of Environment

Encl.
c: Peter Geddes

Environmental Assessment Approval

Approval Date: FEB 2 6 2015

Irish Cove Quarry Expansion
Municipal Enterprises Limited, Approval Holder
Richmond County, Nova Scotia

The Irish Cove Quarry Expansion (the "Undertaking"), proposed by Municipal Enterprises Limited (the "Approval Holder"), Richmond County, Nova Scotia is approved pursuant to Section 40 of the *Environment Act* and Section 13(1)(b) of the *Environmental Assessment Regulations*. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Registration Document.

Terms and Conditions for Environmental Assessment Approval

1.0 General Approval

1.1 The Environmental Assessment Approval for the project is limited to the project as described in the Registration Document. Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the project from that proposed in the Registration Document must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).

1.2 The Approval Holder must, within two years of the date of issuance of this approval, commence work on the Undertaking unless granted a written extension by the Minister.

1.3 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.

1.4 The Approval Holder must implement all mitigation and commitments in the Registration Document, unless approved otherwise by Nova Scotia Environment (NSE).

2.0 Surface Water Resources

2.1 The Approval Holder must not undertake any project related activities within 30 metres of a wetland or watercourse unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.

2.2 The Approval Holder, as part of the application for amendments to the Part V Approval under the Environment Act, must submit to NSE for review and approval:

a) a surface water monitoring plan including sampling locations and parameters. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE;

b) an erosion and sediment control plan;

c) a stormwater management plan including details regarding the plans for monitoring, maintenance and upgrading of the flow retention/siltation treatment areas. Design criteria must recognize increased likelihood of more intense precipitation events in coming decades; and

2.3 All surface water protection and management programs must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

3.0 Groundwater Resources

3.1 The Approval Holder, as part of the application for amendments to the Part V Amendment under the Environment Act, must submit to NSE for review and approval: a) a groundwater monitoring program including location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and

b) at the request of NSE, a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage (in consultation with NSE).

3.2 The Approval Holder must not excavate below the watertable, unless otherwise approved by NSE.

3.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of project operations to the satisfaction of NSE.

4.0 Flora and Fauna

4.1 Clearing vegetation must be conducted outside of the breeding season for most bird species (April 15 to August 31), unless otherwise approved by NSE.

5.0 Protected Area

5.1 The Approval Holder must not undertake any project related activities within 30 metres of the western side of the project boundary (along the Irish Cove Road) unless otherwise approved by NSE. The 30-metre buffer strip must be maintained as forest.

5.2 The Approval Holder must make effort to re-vegetate the already disturbed berm area within this buffer strip, using native species. The berm must be gradually sloped, and top soil must be preserved to promote the re-vegetation effort. A re-vegetation plan must be developed in consultation with NSE.

6.0 Noise and Dust

6.1 The Approval Holder, as part of the application for amendments to the Part V approval under the Environment Act, must provide for review and approval, an updated blasting plan. The plan must include an updated pre blast survey for structures and water supplies within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy as required by NSE.

6.2 At the request of NSE, the Approval Holder must develop and implement an air quality and/or dust monitoring plan. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

6.3 At the request of NSE, the Approval Holder must monitor noise levels. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

7.0 Archaeological and Heritage Resources

7.1 The Approval Holder must cease work and contact the Coordinator, Heritage Division, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artifact unearthed during any phase of the Undertaking. If the find is of suspected or certain Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office.

8.0 Public Engagement

8.1 At the request of NSE, the Approval Holder must develop and submit to NSE, a complaint resolution program to address public concerns associated with the Undertaking. The complaint resolution program must include but not be limited to the appointment of a contact person designated to deal with concerns from the public.

8.2 The Approval Holder must appoint a contact person designated to deal with complaints from the public, and must provide the contact person information to NSE 30 days prior to the commencement of any work. Records of these complaints and associated actions must be made available to NSE upon request.

8.3 At the request of NSE, the Approval Holder must form a Community Liaison Committee (CLC). The NSE Guidelines for the Formation of a Community Liaison Committee should be used for guidance. The Approval Holder must operate the CLC for the duration of the Undertaking and until released in writing by NSE.

9.0 First Nation and Aboriginal Engagement

9.1 The Approval Holder must develop and implement a Mi'kmaq Communication Plan for the Undertaking, which will include a process for communicating project details and seeking input from the Mi'kmaq community.

10.0 Contingency Plans

10.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, must submit to NSE for review and approval a contingency plan that meets NSE's Contingency Planning Guidelines and addresses (including but not limited to):

a) accidental occurrences, and includes the location of spill equipment kept on-site and emergency phone numbers;

b) training to be delivered to staff, including contractors;

c) procedures for responding to incidents occurring during times when the facility is not staffed (e.g. evenings, weekends, holidays);

d) impacts to watercourses and water resources and domestic water supplies;

e) releases of dangerous goods or waste dangerous goods;

f) potential fire at the facility (to be reviewed and approved by the local fire and emergency service providers);

g) petroleum and hazardous material spills and surface water control structure failure; and

h) such other information as required by NSE.

10.2 Contingency plans must be updated/revised to reflect the progressive development of the project. This is to take place over the lifetime of the project, at a schedule acceptable to NSE, and revised as approved by NSE.

10.3 Refuelling must not be conducted within 100 metres of any surface water resource, unless otherwise approved by NSE.

11.0 Project Development and Reclamation

11.1 The Approval Holder, as part of the application for amendments to the Part V Approval under the *Environment Act*, shall provide for review and approval a preliminary reclamation plan that includes progressive reclamation, and details of future land use.

11.2 Reclamation plans must be updated/revised to reflect the progressive development of the project. This is to take place over the lifetime of the project, at a schedule acceptable to NSE, and revised as approved by NSE.

11.3 Quarry expansion approval is subject to progressive reclamation at the existing site being completed to the satisfaction of NSE. Re-vegetation will be limited to the use of native species unless otherwise approved by NSE

11.4 Quarry operations must be completed and reclaimed to the satisfaction of NSE and other appropriate regulatory departments.

Randy Delorey, MLA
Minister of Environment

CONFIDENTIAL

Appendix C to Reply Expert Report of David Estrin

COMPARISON OF

BLACK POINT QUARRY FEDERAL MINISTERIAL EA MITIGATION MEASURES

AND CONDITIONS

WITH

WHITES POINT QUARRY PROPOSED MITIGATION MEASURES

BPQ Federal Ministerial Condition – Decision Statement April 26, 2016 (Appendix F)	**Bilcon Proposed Mitigation Measures**
Prevent and Mitigate Water Quality Impacts on Fish Habitat	
3.1.1 measures to control erosion and limit run-off	• Implementation of erosion and sediment control plan;[1] • Incremental reclamation procedures will reduce area susceptible to erosion;[2] • Recycling of soils for use in incremental reclamation will use existing resources;[3] • The quarry floor will be back sloped to direct runoff waters away from the Bay of Fundy;[4] • Design and implementation of stormwater management plan in accordance with regulatory requirements;[5] • Surface water drainage from the compound area will be directed toward the active quarry and away from Little River Watershed;[6] • Follow up and monitoring to ensure success of reclamation work;[7] • Department of Fisheries and Oceans, Habitat Management Division, have concluded that the only watercourse within the active quarry area is not suitable as fish habitat;[8] • Incremental reclamation will stabilize areas disturbed by quarrying and reduce erosion;[9] • Sediments from the ponds will be kept on-site and used in reclamation;[10]
3.1.2 measures to capture and treat run-off prior to discharge into the environment;	• A system of drainage channels and sediment retention ponds is proposed to control on-site contaminants from entering marine waters;[11] • Controlled discharge with effluent quality monitoring;[12] • Natural surface runoff from the mountainside will be diverted into controlled drainage ways and sedimentation ponds and constructed wetlands before entering the Bay of Fundy;[13]

[1] Bilcon Responses, Chapter 8.1 at p. 12, Table 3.3
[2] *Ibid*
[3] *Ibid*
[4] Bilcon Responses, Chapter 8.1 at p. 13, Table 3.4
[5] *Ibid*
[6] *Ibid*
[7] *Ibid* at p. 14
[8] Bilcon Responses, Chapter 8.1 at p. 27, Table 3.10
[9] Bilcon Responses, Chapter 8.1 at p. 47, Table 3.17
[10] *Ibid*
[11] Bilcon Responses, Chapter 8.1 at p. 47, Table 3.17
[12] *Ibid*
[13] Bilcon Responses, Chapter 8.1 at p. 13, Table 3.4

BPQ Federal Ministerial Condition – Decision Statement April 26, 2016 (Appendix F)	**Bilcon Proposed Mitigation Measures**
	• All surface runoff from disturbed land, before restoration is complete, will flow through a series of sediment retention ponds and then into a constructed wetland;[14] • A closed circuit of aggregate wash water is proposed;[15]
3.1.3. a 30-metre minimum distance from the overburden stockpiles, the fuel and chemical storage facilities and the construction equipment to any water body	• The minimum 30m preservation zone around the quarry perimeter has been expanded to include all quarry lands that contribute surface water to the Little River Watershed;[16] • The water courses near the north and south property lines will be included in the minimum 30 m buffer zone proposed around the perimeter of the property;[17]
3.2 The Proponent shall develop and implement, in consultation with the relevant federal and provincial authorities, a surface water follow-up program to verify the effectiveness of the mitigation measures referred to in condition 3.1.	• Monitoring of water quality and flow at stormwater inflow and outflow points;[18] • Monitoring of effluent quality at all outflows from sediment retention ponds.[19] • In Bilcon's Commitments Table, Bilcon noted the following under "Marine Water Quality" with NSDEL as the "Approving Agency" "5.1 Monitoring – water quality monitoring of all outflows from sediment retention ponds will be conducted weekly for Total Suspended Solids and pH and monthly for general chemistry"[20]

[14] Bilcon Responses, Chapter 8.1 at p. 27, Table 3.10
[15] Bilcon Responses, Chapter 8.1 at p. 47, Table 3.17
[16] Bilcon Responses, Chapter 8.1 at p. 13, Table 3.4
[17] Bilcon Responses, Chapter 8.1 at p. 27, Table 3.10
[18] Bilcon Responses, Chapter 8.1 at p. 13, Table 3.4 at 14
[19] *Ibid*
[20] Bilcon, Whites Point Quarry Environmental Impact Statement, Table C-1 Commitments Table at p. 4

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
Measures to mitigate risk of collision with marine mammals and sea turtles	

3.6 For Designated Project-related vessels transiting between shipping lanes and the marine terminal, the Proponent shall implement measures to mitigate the risk of collisions with whales, Harbour Porpoise (Phocoena phocoena) and sea turtles taking into account the Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas. The measures shall include:
 	
3.6.1 conducting and recording observations for whales, Harbour Porpoise (Phocoena phocoena) and sea turtles;
	• Vessels will use designated inbound/outbound shipping lanes shown on the Canadian Hydrographic Chart.[21]
	• Consideration of new information on the protection of Species at Risk (e.g., results of Allowable Harm Assessment for right whale; recovery strategy for iBoF salmon; other restrictions of critical habitat; recovery strategies or action plans) throughout the life of the Project; and implementation of the new information into Project management if feasible;[22]
	• Employment of trained observer for sighting mammals and waterfowl within defined safety zones and vessel approach/departure route (observations from elevated onshore location and work boat)[23]
	• Observation of shipping channel and safety zone for presence of marine mammals[24]
	• Bilcon also stated in its Commitments Table that it would:[25]
	  ○ work with other groups to provide better data to ships captains with respect to the location of marine mammals.
	  ○ maintain communications with local whale watch and seabird cruise operators operating in the Digby Neck area.
	  ○ report sightings of marine reptiles during routine monitoring of the arrival and departure of the vessel at the marine terminal to the Nova Scotia Leatherback Turtle Working Group and the Nova Scotia Museum of Natural History

3.6.2 requiring that vessels respect speed profile applicable to the operation of the Designated Project subject to navigational safety, to prevent or reduce the risk of collisions between vessels and whales, Harbour Porpoise (Phocoena phocoena) and sea turtles; and	• Vessel speed reductions and/or course alteration in case of whale sightings within designated approach/departure route[26] • Reduced vessel speed (10 knots or less) and/or alteration of course in case of sighting of marine mammals within designated shipping route;[27] • Marine mammal interactions within the vessel turning radius are unlikely due to the slow

[21] Bilcon Responses, Chapter 8.1 at p. 32, Table 3.11
[22] *Ibid* at p. 31
[23] *Ibid*
[24] Bilcon Responses, Chapter 8.1 at p. 30, Table 3.11
[25] Bilcon, Whites Point Quarry Environmental Impact Statement, Table C-1 Commitments Table at p. 8 - 9
[26] *Ibid*
[27] *Ibid* at p. 31

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
	movement of the vessel while manoeuvring into and out of the berth.[28] • Bilcon also stated in its Commitments Table that it would not permit a ship speed in excess of 12 km/hour during the transit from shipping lanes to the marine terminal.[29] •
3.6.3 reporting collisions with whales, Harbour Porpoise (Phocoena phocoena) and sea turtles within 2 hours to the Canadian Coast Guard, and notifying Indigenous groups in writing.	N/A

[28] *Ibid* at p. 30
[29] Bilcon, Whites Point Quarry Environmental Impact Statement, Table C-1 Commitments Table at p. 8

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
Avoid harm to fish habitat when using explosives	
3.7 The Proponent shall, unless otherwise authorized under the Fisheries Act, implement measures to prevent or avoid the destruction of fish, or any potentially harmful effects to fish habitat, during all phases of the Designated Project when using explosives in or around water frequented by fish and shall conduct blasting by taking into consideration Fisheries and Oceans Canada's *Measures to Avoid Causing Harm to Fish and Fish Habitat* and the *Nova Scotia Pit and Quarry Guidelines.*	• Blasting will be guided by "Bilcon of Nova Scotia Corporation's 'Blasting Protocol'" and adhere to the Department of Fisheries and Oceans "Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters"[30]

[30] Bilcon Responses, Chapter 8.1 at p. 29 Table 3.11

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
Avoiding Harm to Migratory Birds	
4.1 The Proponent shall carry out all phases of the Designated Project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act.*	• The scheduling of any habitat alteration will be done to minimize direct impacts on all bird species. Clearing activities for quarry expansion will generally take place during late fall through winter to avoid spring and fall migrations and to avoid the most sensitive spring and summer nesting period;[31] • The constructed wetlands will be designed to attract avian wildlife, especially resident waterfowl and migratory species that may use them for both nesting and staging sites. • No Harlequin Ducks have been observed in the waters near the site and Barrow's Goldeneye have not been observed either to winter at site, so no mitigation is proposed.[32] • Timing of blasting activities is proposed within 3 hours of low tide, and at low tide whenever possible;[33] • Blasting will not be conducted if waterbirds are within 170m of the detonation point;[34] • Waterbird interactions within the turning radius are unlikely due to the slow movement of the vessel while manoeuvring into and out of the berth;[35] • During clearing operations Bilcon will comply with all relevant federal and provincial legislation protecting birds, nests and eggs.[36] • Nest survey and mitigation (if clearing required during nesting season)[37]
Buffer Zone – Migratory Birds	
4.2 The Proponent shall not clear vegetation within 30 metres of the coastal high water mark with the exception of the location where the ship loading conveyor and the marine terminal transect this area. The Proponent shall also not clear vegetation in the control zone between 30 and 75 metres from the coastal high water mark	• A minimum 30m environmental preservation zone is proposed, extending from the mean high water mark, inland along the 3 km (1.9 mi.) coastline of the property;[38] • During the JRP hearings, the proponent indicated its readiness to work with researchers and government officials to identify appropriate buffer sizes.[39]

[31] Bilcon Responses, Chapter 8.1 at p. 23, Table 3.9
[32] Bilcon Responses, Chapter 8.1 at p. 30, Table 3.11
[33] *Ibid*
[34] *Ibid*
[35] *Ibid*
[36] Bilcon, Whites Point Quarry Environmental Impact Statement, Table C-1 Commitments Table at p. 10
[37] Bilcon Responses, Chapter 11, at p. 78
[38] Bilcon Responses, Chapter 8.1 at p. 23, Table 3.9
[39] Joint Review Panel, *Environmental Assessment of the Whites Point Quarry and Marine Terminal Project: Joint Review Panel Report* (October 2007) at p. 45; See also Paul Buxton's Response in Whites Point Quarry and Marine Terminal Project Public Hearing Transcript, Volume 3, at p. 565

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
except where needed to install and maintain erosion and sediment discharge control measures, for the access road, the ship loading conveyor, and the marine terminal.	
Wetlands - Migratory Birds	
4.3 The Proponent shall mitigate the adverse environmental effects of the Designated Project on wetland functions that support migratory birds. The Proponent shall give preference to avoiding the loss of wetlands over minimizing the effects on wetlands and to minimizing the effects on wetlands over compensating for lost or adversely affected wetlands. For effects on wetlands that cannot be avoided or minimized, the Proponent shall, in consultation with Indigenous groups and relevant provincial and federal authorities, compensate for wetland functions lost.	• Natural surface runoff from the mountainside will be diverted into controlled drainage ways and sedimentation ponds and constructed wetlands before entering the Bay of Fundy;[40] • The bog area is in the identified preservation zone and existing natural habitat requirements, such as intermittent surface water flow, will be maintained;[41] • Storm water management plan to ensure water supply for wetlands is maintained;[42] • Wetlands on the quarry site identified by the NSDNR wetlands database will be included in the permanent environmental preservation zone[43] • Monitoring of wetland/bog environments (species, water regime)[44]
Lighting – Migratory Birds	
4.4 The Proponent shall control lighting required for the construction, operation and decommissioning of the Designated Project including direction, timing, and intensity to avoid effects on migratory birds, while meeting health and safety requirements.	• Limit construction activities (e.g., 7:00 am to 7:00 pm); • Conveyor system lighting will be shielded and directed onto the conveyor belts; • Minimal light spill from the elevated shiploader lighting is expected into the marine waters and into the night sky; • Whenever feasible, ship loading would be conducted in daylight hours to avoid night light that could attract fish or birds; • Preservation of a 30 m environmental preservation zone to screen site; • Incremental reclamation of quarry site to 8e-establish/ increase screening effect of vegetation buffers; • On-land lighting plans will be developed considering the criteria proposed by the International Dark-Sky Association (IDA). Design criteria would include:

[40] Bilcon Responses, Chapter 8.1 at p. 13, at p. 14 Table 3.4
[41] *Ibid*
[42] Bilcon Responses, Chapter 8.1 at p. 23, Table 3.9
[43] Bilcon Responses, Chapter 11, at p. 77
[44] *Ibid*

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
	○ keeping artificial lighting to a minimum ○ security lighting to be motion activated ○ reduction of "light trespass" on to neighbouring properties ○ selection of luminaries (lighting fixtures) that reduce glare ○ selection of luminaries that are designed to not pollute the night sky • Each fixture will be provided with shields to prevent light spill beyond the area of illumination and to contain all lighting effects within the property line of the quarry[45]
Follow Up Measures Regarding Mitigation Measures Effectiveness	
4.7 The Proponent shall develop prior to construction and implement, during all phases of the Designated Project, a follow-up program to determine the effectiveness of the mitigation measures used to avoid harm to migratory birds, their eggs and nests, including the measures used to comply with conditions 4.1 to 4.6.	• Bilcon proposed to employ an adaptive management program to follow up on the effectiveness of all mitigation measures including measures on migratory birds. See EIS Response Document, Chapter 3.6 Adaptive Management at p. 3 ○ "Adaptive management will be applied throughout all phases of the Project and in particular with regard to the mitigation measures. As soon as monitoring identifies that mitigation measures are not performing satisfactorily, the adaptive management process will guide the improvement or replacement of those measures in conjunction with adaptive management practices in the Project Operations Plan."

[45] Bilcon Responses, Chapter 8.1 at p. 21, Table 3.8

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
Noise and Dust	
5.6 The Proponent shall implement noise and dust reduction measures during all phases of the Designated Project including:	• Dust control via water spray or other approved methods; • Paved access road from HWY 217 to the quarry property; • Monitoring of particulate emissions (dust) • Crushing and screening will take place approximately 1000m from the nearest residence; • Crusher and screens to be enclosed, conveyor systems hooded.[46] • A 30 m environmental preservation zone is proposed around the quarry perimeter and White's Cove Road;[47] • The 30m preservation zone will remain forested to help absorb and deflect sound waves;[48] • Sockets will be drilled into the bedrock for seating the piles of the marine terminal rather than continuous pile driving;[49] • Blasting will not be conducted during times of thermal inversion, on foggy, cloudy or overcast days to minimize sound propagation [50] • Each blast will be monitored for concussion and ground vibration.[51] • Rubber lined truck beds will be used to reduce noise of truck loading and rubberized screens will be used in the aggregate screening process;[52] • Environmental preservation zones along the coast line and property lines of the quarry to attenuate noise from ship loading activities.[53] • Horizontal separation distance of about 1.5km between ship loading activity and the nearest residence;[54] • Noise and vibration from the quarry to meet the requirements set forth in the *NSDEL "Pit and Quarry Guidelines"* at the quarry property line[55]

[46] Bilcon Responses, Chapter 8.1 at p. 18, Table 3.6
[47] Bilcon Responses, Chapter 8.1 at p. 19, Table 3.7
[48] *Ibid*
[49] *Ibid*
[50] *Ibid*
[51] *Ibid*
[52] *Ibid*
[53] *Ibid*
[54] *Ibid*
[55] *Ibid*

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
	• Blasting in compliance with Department of Fisheries and Oceans "*Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters*"[56] • Monitoring of noise level at property line and receptor locations; reporting to NSDEL[57] • See also Key Content of Bilcon's Environmental Management Plan which includes dust control and noise control.[58]
5.6.1 restricting operating hours for the quarry and processing plants to no more than 16 hours per day;	• Hours of operation will be from 0600 – 2200.[59]
5.6.2 restricting blasting to daytime hours and weekdays;	• No blasting shall occur on Sunday, on a statutory holiday prescribed by the Province or on any day between the hours of 1800 hours and 0800 hours.[60]
5.6.3 applying dust suppressant on all disturbed areas and roads during activities with the potential for generating dust; and	• Dust generated on-site will be controlled with water spray or other approved methods;
5.6.4 suspending activities during periods of sustained winds greater than 30 kilometres per hour where fugitive dust emissions cannot be controlled.	• Major component activities that could create dust were to be covered (the crushers, the screen houses and critically, the conveyors). Additionally all aggregate was to be washed.
Follow Up Program on Noise and Dust	
5.7 The Proponent shall develop and implement a follow-up program to verify the accuracy of the environmental assessment as it pertains to dust and noise levels. The Proponent shall consider the methodologies described in the Nova Scotia Pit and Quarry Guidelines when developing and implementing the program.	• Bilcon proposed to employ an adaptive management program to follow up on the effectiveness of all mitigation measures including measures on migratory birds. See EIS Response Document, Chapter 3.6 Adaptive Management at p. 3 "Adaptive management will be applied throughout all phases of the Project and in particular with regard to the mitigation measures. As soon as monitoring identifies that mitigation measures are not performing satisfactorily, the adaptive management process will guide the improvement or replacement of those measures in conjunction with adaptive management practices in the Project Operations Plan."

[56] *Ibid*
[57] *Ibid*
[58] Bilcon Responses, Chapter 11, at p. 65, Table 3
[59] Bilcon, Environmental Impact Statement, Chapter 7, Project Description at p. 31
[60] Bilcon, Environmental Impact Statement, Appendix Volume III, Tab 9 – Whites Point Quarry – Blasting Protocol at p. 2

BPQ Ministerial Condition	Bilcon Proposed Mitigation Measures
Cultural Heritage and Archaeology	
6.2 In the event that archaeological and heritage resources are discovered, the Proponent shall: 6.2.1 immediately halt work at the location of the discovery; 6.2.2 have a qualified individual conduct an assessment at the location of the discovery; 6.2.3 inform, forthwith, in writing, Indigenous groups of the discovery, and allow for monitoring by Indigenous groups during archaeological work; and 6.2.4 comply with any legislative or legal requirements respecting the discovery of archaeological and heritage resources.	• Contact with qualified archaeologist • Assessment of find; • Continuation of work dependent on archaeologist's advice on further steps[61] • Bilcon also committed to further investigation with respect to the location of the historic Indian Hill Camp reference in the study by the Confederacy of Mainland Mi'kmaq.[62] • If any resources are uncovered such as potential human remains, procedures outlined in the Cemeteries Protection Act will be followed.[63] • Before construction, an educational briefing concerning archaeological/historical resources will be conducted for quarry employees.[64] • A local archaeologist will be on call if immediate situations arise[65] • Construction will not recommence until artifacts are evaluated by the Museum and permission is granted by the Museum to resume work. [66]
7.3 The Proponent shall, prior to construction and in consultation with relevant federal and provincial authorities and Indigenous groups, develop an emergency response plan in relation to the Designated Project.	• See Bilcon's Environmental Management Plan – Key Contents which includes a section on Contingency and Emergency Response Planning[67]

[61] Bilcon Responses, Chapter 11 at p. 2, Table 1
[62] Bilcon Responses, Chapter 9.3.2 at p. 2
[63] Bilcon Responses, Chapter 8.1 at p. 34, Table 3.12
[64] *Ibid*
[65] *Ibid*
[66] *Ibid*
[67] *Ibid* at p. 66

Appendix D to Reply Expert Report of David Estrin

COMPARISON OF BLACK POINT QUARRY PROVINCIAL MINISTERIAL EA MITIGATION MEASURES AND CONDITIONS WITH WHITES POINT QUARRY PROPOSED MITIGATION MEASURES

BPQ Provincial Ministerial Conditions – Nova Scotia EA Approval April 26, 2016 (Appendix G)	**Bilcon's Proposed Mitigation Measures**
Surface Water Resources	
Condition 2.1 The Approval Holder must not undertake any quarry related activities within 30 metres of a watercourse unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.	• All of the Little River watershed on the quarry property, approximately 8.5 hectares (21 acres), will be within an environmental preservation zone and no quarrying will take place in the Little River watershed
Condition 2.2 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval: a) a surface water monitoring plan including sampling locations, parameters and frequency of sampling. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations to the satisfaction of NSE; b) an erosion and sediment control plan c) a stormwater management plan including details regarding the plans for monitoring, maintenance and upgrading the flow of retention/ siltation treatment areas. Design criteria must recognize increased likelihood of more intense precipitation events in coming decades and meet discharge criteria per NSE requirements; and d) details of pre-and post-development water quality and quantity monitoring program. Sampling methods and/or protocols must be provided to the satisfaction of NSE	• Implementation of erosion and sediment control plan[1] • Design and implementation of a stormwater management plan in accordance with regulatory requirements[2] • Retention ponds to be designed with sufficient capacity for 100 year frequency storm event[3] • Monitoring of water quality and flow at stormwater inflow and outflow points[4] • Monitoring of effluent quality at all outflows from sediment retention ponds.[5]

[1] Bilcon Responses, Chapter 8.1 at Table 3.4
[2] Bilcon Responses, Chapter 8.1 at Table 3.4
[3] Bilcon Responses, Chapter 11, at Table 2
[4] Bilcon Responses, Chapter 8.1 at Table 3.4
[5] *Ibid*

Condition 2.3 All surface water protection and management programs must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.	• Bilcon proposed to employ an adaptive management program to follow up on the effectiveness of all mitigation measures. See EIS Response Document, Chapter 3.6 Adaptive Management at p. 3 "Adaptive management will be applied throughout all phases of the Project and in particular with regard to the mitigation measures. As soon as monitoring identifies that mitigation measures are not performing satisfactorily, the adaptive management process will guide the improvement or replacement of those measures in conjunction with adaptive management practices in the Project Operations Plan."

BPQ Provincial Ministerial Conditions	**Bilcon's Proposed Mitigation Measures**
Wetlands	
Condition 3.2 The Approval Holder must not undertake any quarry related activities within 30 metres of a wetland unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted.	• Wetlands on the quarry site identified by the NSDNR wetlands database will be included in the permanent environmental preservation zone[6]
Condition 3.3 The Approval Holder must provide cross-drainage (not a single culvert) under roads through wetlands so that hydrologic linkages on both sides of the road are maintained.	
Condition 3.7 The Approval Holder must develop and implement a wetland monitoring plan to be approved by the NSE Wetland Specialist.	• Monitoring of wetland/bog environments (species, water regime)[7] • See also Chapter 11, Table 1 at p. 51 & 53 of Bilcon's Responses for details of monitoring components / parameters proposed

BPQ Provincial Ministerial Conditions	**Bilcon's Proposed Mitigation Measures**
Groundwater Resources	

[6] Bilcon Responses, Chapter 11 at p. 77, Table 2
[7] *Ibid*

Condition 4.1 The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must submit to NSE for review and approval: a) a groundwater monitoring program including the location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and b) a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage (in consultation with NSE).	• Groundwater monitoring (monitoring wells, on-site supply wells, residential wells)[8] • A comprehensive groundwater monitoring program was initiated in the fall of 2005 in accordance with the recommendations of Provincial experts. The design and construction of six monitoring wells will allow implementation of a multi-level monitoring program from discreet depths and geologic horizons.[9] • Water quality monitoring will be performed by Bilcon of Nova Scotia Corporation on an annual basis for bacteriology, general chemistry, and trace metals. Summary reports of groundwater levels and water quality will be provided to the Nova Scotia Department of Environment and Labour monthly during operation of the quarry[10]
Condition 4.2 The Approval Holder must not excavate below mean sea level, unless otherwise approved by NSE.	• No excavation is planned to be carried out below sea level.[11]
Condition 4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of quarrying operations to the satisfaction of NSE.	• Bilcon of Nova Scotia Corporation will replace any existing water supply lost or damaged within 800m of active quarry[12]

BPQ Provincial Ministerial Conditions	**Bilcon's Proposed Mitigation Measures**
Flora and Fauna	

[8] Bilcon Responses, Chapter 8.1 at p. 11, Table 3.2
[9] Bilcon EIS at Volume VI, Chapter 9.1.3 at p. 29
[10] *Ibid*
[11] Bilcon EIS at Volume VI, Chapter 9.1.2 at p. 24
[12] Bilcon Responses, Chapter 8.1 at p. 11, Table 3.2

Condition 5.1 The Approval Holder must develop a lighting plan for the Undertaking area that minimizes and manages lighting impacts on migratory birds and breeding birds. The lighting management for operations should consider fog impacts exacerbated by lighting during mid-May through June 10th which is an especially sensitive window in spring migration. Any mortality of Leach's Storm Petrels must be reported to NSDNR-Wildlife Division and Canadian Wildlife Services immediately.	• Conveyor system lighting will be shielded and directed onto the conveyor belts; • Minimal light spill from the elevated shiploader lighting is expected into the marine waters and into the night sky; • Whenever feasible, ship loading would be conducted in daylight hours to avoid night light that could attract fish or birds; • Preservation of a 30 m environmental preservation zone to screen site; • Incremental reclamation of quarry site to reestablish/increase screening effect of vegetation buffers; • On-land lighting plans will be developed considering the criteria proposed by the International Dark-Sky Association (IDA). Design criteria would include: ○ keeping artificial lighting to a minimumo security lighting to be motion activated ○ reduction of "light trespass" on to neighbouring properties ○ selection of luminaries (lighting fixtures) that reduce glare ○ selection of luminaries that are designed to not pollute the night sky ○ Each fixture will be provided with shields to prevent light spill beyond the area of illumination and to contain all lighting effects within the property line of the quarry[13]
Condition 5.2 Prior to blasting, the Approval Holder must submit a blasting management plan developed in consultation with NSDNR-Wildlife Division, to NSE. This plan is to optimize blasting and align a monitoring approach to determine impacts in relation to nesting seabirds.	• Blasting will be guided by "Bilcon of Nova Scotia Corporation's 'Blasting Protocol'" and adhere to the Department of Fisheries and Oceans "Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters"[14]

[13] Bilcon Responses, Chapter 8.1 at p. 21-22, Table 3.8
[14] Bilcon Responses, Chapter 8.1 at p. 29, Table 3.11

Condition 5.3 The Approval Holder must maximize the coastal buffer (i.e. between the coastal shore side of the project and the Project components) to the satisfaction of NSE and NSDNR-Wildlife Division. The buffer must be a minimum of 30 metres in the plant operations areas and 75 metres in all other areas, except where needed for the access road; to install and maintain erosion and sediment discharge control measures; for the ship loading conveyor; and for the marine terminal. Native vegetation within the coastal buffer must not be disturbed.	• A minimum 30m (100 ft.) environmental preservation zone is proposed, extending from the mean high water mark, inland along the 3 km (1.9 mi.) coastline of the property • During the JRP hearings, Bilcon did not disagree with the 100 m coastal buffer proposed by Nova Scotia government officials but instead indicated its readiness to work with researchers and government officials to identify appropriate buffer sizes. [15]
Condition 5.4 Clearing and grubbing of vegetation must be conducted outside of the breeding season for most bird species (April 15 to August 15), unless otherwise approved by NSE.	• The scheduling of any habitat alteration will be done to minimize direct impacts on all bird species. Clearing activities for quarry expansion will generally take place during late fall through winter to avoid spring and fall migrations and to avoid the most sensitive spring and summer nesting period; [16]

[15] Joint Review Panel, *Environmental Assessment of the Whites Point Quarry and Marine Terminal Project: Joint Review Panel Report* (October 2007) at p. 45; See also Paul Buxton's Response in Whites Point Quarry and Marine Terminal Project Public Hearing Transcript, Volume 3, at p. 565

[16] Bilcon Responses, Chapter 8.1 at p. 23 Table 3.9

BPQ Provincial Ministerial Conditions	Bilcon's Proposed Mitigation Measures
Noise and Dust	
Condition 6.1 The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must provide for review and approval, a blasting plan. The plan must include a pre blast survey for structures and water supplies within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy as required by NSE.	• See Appendices Volume 3, Tab 9 for Bilcon's blasting plan dated May 2005 which include the following: ○ "…Conduct a pre-blast survey of all structures within 800 meters of the point of blast. This survey will be conducted in accordance with the Nova Scotia Department of Environment and Labour's "Procedure for Conducting a Pre-Blast Survey" November 1993."[17]
Condition 6.2 The Approval Holder must develop and implement an air quality and/or dust monitoring plan, at the request of NSE. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.	• Monitoring of particulate emissions (dust)[18] • Dust emissions to remain within regulatory standards[19] • See also Chapter 11, Table 1 at p. 51-52 of Bilcon's Responses for details of monitoring components / parameters proposed
Condition 6.3 The Approval Holder must monitor noise levels, at the request of NSE. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.	• Monitoring of noise level at property line and receptor locations; reporting to NSDEL [20] • Noise and vibration from blasting will meet the requirements set forth in the NSDEL "Pit and Quarry Guidelines"[21] • Each blast will be monitored for concussion and ground vibration[22] • See also Chapter 11, Table 1 at p. 52 of Bilcon's Responses for details of monitoring components / parameters proposed

[17] Bilcon EIS, Appendices Volume 3, Tab 9 at p. 2
[18] Bilcon Responses, Chapter 8.1 at p. 17, Table 3.8
[19] Bilcon Responses, Chapter 11 at p. 74, Table 2
[20] Bilcon Responses, Chapter 8.1 at p. 20, Table 3.7
[21] Bilcon Responses, Chapter 8.1 at p. 19, Table 3.7
[22] *Ibid*

BPQ Provincial Ministerial Conditions	Bilcon's Proposed Mitigation Measures
Archaeological and Heritage Resources	
Condition 7.1 Prior to construction, the Approval Holder must develop and implement a Cultural Resource Management Plan and complete required additional archaeology work to the satisfaction and approval of Nova Scotia Department of Communities, Culture and Heritage.	• Prior to marine construction, Bilcon of Nova Scotia Corporation will have the appropriate archaeological investigations conducted under permit with the Nova Scotia Museum: if archaeological resources are discovered as a result of this investigation, appropriate mitigation actions will be taken in consultation with the Nova Scotia Museum[23] • An on-site archaeological survey will be conducted • Archaeological recording and limited testing of the Hersey House foundation plus an area within a 250m radius around the house will be conducted under permit with the Nova Scotia Museum if the foundation cannot be avoided during quarry construction or operations • Bilcon to further investigate location of the historic Indian Hill Camp *referenced in study by the Confederacy of Mainland Mi'kmaq • Before construction and operation of the quarry, an educational briefing concerning archaeological and historical resources will be conducted for all quarry employees; training program to be established in consultation with regulatory agency[24]
Condition 7.2 The Approval Holder must cease work and contact the Special Places Coordinator, Cultural Heritage and Development Division, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artifact unearthed during any phase of the Undertaking. If the find is of suspected or certain Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office and the Chief of Sipekne'katik First Nation.	• In the event of discovery of items suspected to be of archaeological significance, the earthwork/quarry face development will stop and a qualified archaeologist informed to assess the find and to advise on further steps[25]

[23] Bilcon Responses, Chapter 11 at p. 85, Table 2
[24] Bilcon Responses, Chapter 11 at p. 85, Table 2
[25] Bilcon Responses, Chapter 11 at p. 85, Table 2

BPQ Provincial Ministerial Conditions	Bilcon's Proposed Mitigation Measures
Public Engagement	
Condition 8.1 The Approval Holder must operate the Community Liaison Committee (CLC) for the duration of the Undertaking and until released in writing by NSE. Condition 8.2 At the request of NSE, the Approval Holder must provide records of the CLC including meeting minutes, complaints and associated actions.	• An Environmental Complaint Records & Action Plan was listed as one of Bilcon's implementation mechanisms.[26] • Re-establishment of the Community Liaison Committee with a local tourism representative is proposed to maintain lines of communication between the quarry and tourism industries[27] • Re-establishment of the Community Liaison Committee with a local fisherman representative is proposed to maintain lines of communication between the quarry and fishing industries[28] • Consultation with local community with respect to details of site reclamation and after use[29] • Re-establishment of the community liaison committee that was established when a 4 hectare quarry was permitted in 2002.[30]
Condition 8.3 The Approval Holder must develop a complaint resolution plan to address all concerns associated with the Project. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.	• A complaint process will be established by Bilcon of Nova Scotia Corporation to address environmental matters and any quality of life issues[31]

First Nation and Aboriginal Engagement	
The Approval Holder must develop and implement a Mi'kmaq Engagement Strategy for the Undertaking, which will include a process for a communicating project details and seeking input from the Mi'kmaq community.	Bilcon of Nova Scotia Corporation will continue its efforts to consult with First Nations and address their concerns[32]

[26] Bilcon Responses, Chapter 11 at p. 65
[27] Bilcon Responses, Chapter 11 at p. 90, Table 2
[28] Bilcon responses, Chapter 8.1 at p. 42, Table 3.16
[29] *Ibid*
[30] Bilcon Responses, Chapter 8.1 at p. 45, Table 3.17
[31] Bilcon Responses, Chapter 11 at p. 91, Table 2
[32] Bilcon Responses, Chapter 11, at p. 86, Table 2.

BPQ Provincial Ministerial Conditions	Bilcon's Proposed Mitigation Measures
Contingency Plans	
The Approval Holder, as part of the application for the Part V Approval under the Environment Act, must submit to NSE for review and approval a contingency plan that meets NSE's Contingency Planning Guidelines and addresses (including but not limited to): a) accidental occurrences, and includes the location of spill equipment kept on-site and emergency phone numbers; b) training to be delivered to staff, including contractors; c) procedures for responding to incidents occurring during times when the facility is not staffed (e.g. evenings, weekends, holidays); d) impacts to watercourses and water resources and domestic water supplies; e) releases of dangerous goods or waste dangerous goods; f) potential fire at the facility (to be reviewed and approved by the local fire and emergency service providers); g) petroleum and hazardous material spills and surface water control structure failure; h) impacts on birds and associated habitats on which they depend. The marine oil spill emergency measures plan and petroleum products management on the Undertaking site should be developed with NSE, Environment Canada-Canadian Wildlife Service and Fisheries and Oceans Canada; and i) such other information as required by NSE.	• A "Contingency and Emergency Response Planning (Operational Emergencies and Natural Events)" component was included in Bilcon's Environmental Management Plan. Key contents of this component include: ○ Hazard analysis and risk determination ○ Project-specific policies and procedures for events such as fires, explosions, spills, operational upsets, equipment malfunctions, severe weather, power outages, transport accidents; ○ Minimum plan requirements (prevention, preparedness, response, recovery/clean up)[33]

[33] Bilcon Responses, Chapter 11 at p. 66

Condition 10.2 Contingency plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.	Reclamation of disturbed areas will be incremental over the life of the project as shown on the Concept Quarry Plans (mine plans) –Plans OP1 – R1 through OP8 – R1. Costs for reclamation are approximately $7,000.00 per hectare as provided in the operational cost estimates. Reclamation would be completed using quarry equipment and contracts with local landscapers. The final areas of reclamation would include the areas used for sediment and organic storage and the last area to be quarried.[34]
Condition 10.3 Refuelling must not be conducted within 100 metres of any surface water resource, unless otherwise approved by NSE.	

BPQ Provincial Ministerial Conditions	**Bilcon's Proposed Mitigation Measures**
Quarry Development and Reclamation	
Condition 11.1 The Approval Holder, as part of the application for the Part V Approval under the Environment Act, shall provide for review and approval a preliminary reclamation plan that includes progressive reclamation and details of future land use.	• A Reclamation Plan (incl. habitat management plan) was listed as one of Bilcon's implementation mechanisms.[35]
Condition 11.2 Reclamation plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.	• Incremental forest clearing and reclamation will be carried out during the 50 year life of the quarry project to maintain habitat diversity[36]
Condition 11.3 Quarry operations must be completed and reclaimed to the satisfaction of NSE, NSDNR and other appropriate regulatory departments.	

[34] Bilcon, Revised Project Description at p. 72, http://www.ceaa.gc.ca/B4777C6B-docs/WP-1694.pdf
[35] Bilcon Responses, Chapter 11 at p. 65
[36] Bilcon Responses, Chapter 11 at p. 77, Table 2

Appendix E to Reply Expert Report of David Estrin

CHART: COMPARISON OF HOW THE CEA AGENCY IN BPQ DEALT WITH PUBLIC COMMENTS REGARDING SIMILAR ISSUES IN THE JRP REVIEW OF WPQ

Comparison of How the CEA Agency in BPQ Dealt with Public Comments Regarding Similar Issues In the Joint Review Panel Review of WPQ

This document highlights concerns raised by members of the public, environmental and indigenous groups, and government agencies in commenting on the BPQ draft Environmental Assessment Report that were similar to concerns raised by the Joint Review Panel in WPQ. It demonstrates how many of these concerns were treated and responded to by the Agency. This comparison shows that many of the similar concerns raised before the JRP by members of the public and others, when considered by the Agency in BPQ were either not acted on or found to be possible to be addressed, if required, by other means. In many instances, the Agency's approach demonstrates a stark contrast to the approach taken by the JRP in WPQ. Further, the Agency's response evidences standard EA review practice regarding JRP's concerns. Selected key comments received on the BPQ draft environmental assessment report are summarized in the table below. This table was adapted from Appendix G of the BPQ Environmental Assessment Report.

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
Fish and Fish Habitat – Blasting Residues				
Public / NGOs	Blasting agents that are proposed to be used are ammonium nitrate and fuel oil. The Joint Review panel for the White Points Quarry Project (A) identified certain environmental effects caused by using these blasting agents. Concerns included the negative effect of ammonium nitrate and fuel oil on surface water resources (the presence of nitrates in freshwater can encourage algal growth and cause eutrophication and consequently affect aquatic life). The Draft Environmental Assessment Report discusses explosive spills, however, does not address the issue of blasting residue.	The Agency has identified mitigation measures to protect fresh and marine waters from the effects of blasting. These include conducting blasting in accordance with the *Measures to Avoid Causing Harm to Fish and Fish Habitat* on Fisheries and Oceans Canada's website and the *Nova Scotia Pit and Quarry Guidelines* (NSEL 1999). The Agency also recommends that the proponent: • Ensure discharges into Chedabucto Bay do not exceed discharge water quality objectives, including those specified in the *Nova Scotia Pit and Quarry Guidelines*, project-specific limits set by the	No changes required.	**This comment explicitly references the WPQ JRP's concerns regarding potential effects of ammonium nitrate and fuel oil (ANFO).** **The Agency's response confirms, that compliance with existing federal and provincial guidelines/policies is sufficient to mitigate such effects.** **The explicit response by the Agency to this comment demonstrates that the Agency in BPQ concluded this issue of concern could be mitigated. Given the Agency was responding to a JRP type issue, the Agency Response is relevant for this Tribunal's consideration.**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
		Province of Nova Scotia, and are in compliance with section 36(3) of the *Fisheries Act*; • Design and implement an erosion and sediment control plan to protect surface water, wetlands, and Chedabucto Bay. The plan should include measures to limit run-off, as well as facilities to capture and treat run-off and be approved by the Province of Nova Scotia.		
Marine Species and Habitats – Invasive Species				
Public / NGOs	Invasive species introductions monitoring should be a requirement, since huge amounts of ballast would be discharged by ships traveling to the quarry on a regular basis, ballast water exchange is far from perfect in terms of preventing the introduction of invasive species. Also, hull fouling is a major and unmitigated impact for invasive species introductions. The proponent should be required to give details on how this impact would be mitigated. It is recommended that periodic	The Agency recognizes that potential effects resulting from the release of non-compliant ballast water depends on the origin of the organisms and the location of the point of discharge. The *Ballast Water Control and Management Regulations SOR2011-237* specifically govern these potential environmental effects. The Agency is of the view that the proponent acting in accordance with Transport Canada's Regulations would effectively mitigate potential effects and the likelihood of those effects, resulting from the release of non-compliant	No changes required.	**These public comments mirror concerns of the WPQ JRP, which insisted on 100% removal of organisms and cast doubt on the effectiveness of Transport Canada's Ballast Water Control and Management Water Regulations.** **The approach of the Agency in response to these comments demonstrates that the Agency found compliance with Transport Canada's regulations an effective mitigation measure, an approach that contrasts starkly with the JRP's approach in WPQ.**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
	cleaning of hulls, anti-fouling paint and/or other measures are used.	ballast water associated with the Project. The Agency recognizes that the potential effects resulting from the introduction of invasive species through hull fouling can best be mitigated by the Proponent adhering to Resolution MEPC.207(62) *"2011 Guidelines for the Control and Management of Ships' Bio-fouling to Minimize the Transfer of Invasive Aquatic Species"* and to any subsequent Regulations made in reference to it. The Agency is of the view that the proponent acting in accordance with Transport Canada's Regulations would effectively mitigate potential effects and the likelihood of those effects, resulting from the release of non-compliant ballast water associated with the Project.		
Marine Species and Habitats –Noise				
Public / NGOs	The Fisheries and Oceans Canada guidelines for noise may not be adequate to address sub-lethal and cumulative impacts on marine life. Proponent should produce	The Agency was advised by Fisheries and Oceans Canada that blasting should be conducted in accordance with the *Measures to Avoid Causing Harm to Fish and Fish Habitat* on Fisheries and	No changes required.	**The Agency's response to these comments questioning the adequacy of federal guidelines to address impacts on marine life demonstrates an approach that significantly differs from that of the JRP in WPQ. In**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
	modelling of current and future noise profiles in Chedabucto Bay.	Oceans Canada's website. The Agency has identified this as essential mitigation. If effects thresholds are exceeded, the Agency recommended that the proponent be required to develop and implement site-specific mitigation measures to the satisfaction of Fisheries and Oceans Canada to protect fish, turtles and marine mammals.		**WPQ, many of the JRP's recommendation were directed at the JRP's perception of inadequacies in federal and provincial policies and guidelines to address environmental effects. The JRP's view on such inadequacies permeated its report, implicitly and explicitly (e.g. the JRP's comments on the ballast water management regulations).** **In BPQ, the Agency's response demonstrates that even where effects persist after compliance with federal guidelines, such environmental effects could be addressed by requiring a monitoring program and that site-specific mitigation measures be implemented based on the results of the monitoring program**
Noise From Blasting				
Individual	Comment that explosives used on the site will create undue noise and disruption to residents and animals both wild and domestic.	The Agency has assessed the impact of project-related noise and determined that with the application of mitigation measures there would not be a significant impact.	No changes required. [Note: The Agency's response is made despite the proponent's prediction that	**Though similar to concerns identified by the JRP in WPQ below, the Agency was willing to accept that such environmental effects could be mitigated, but the JRP was not. In fact, the JRP concluded that there would be adverse environmental effects despite comments from Health Canada stating that, "is protective of human**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
			noise from blasting activities could be detectable at a distance up to 100 kilometres from the source.[1]]	**health provided all applicable mitigative measures as presented in the environmental impact statement and subsequent proponent responses are undertaken."[2]** **The JRP did not want land use changed and did not want to rely on measured or modeled noise predictions.**
Fisheries				
Public / NGOs	Details of the fisheries offset plan are needed to determine if habitat destroyed will be compensated for adequately and effectively. There should be a plan for follow up monitoring to determine their effectiveness.	The Agency identified that a key measure to mitigate effects on marine species and habitats is to implement a marine fisheries offsetting plan, developed in consultation with Fisheries and Oceans Canada, local commercial fishers, and the Nova Scotia Mi'kmaq. There will be a requirement for monitoring and follow-up as part of the offsetting authorization.	No changes required.	**The Agency's response indicates it did not insist on specific details, but instead found it sufficient to recommend that, as a mitigation measure, the proponent implement a marine fisheries offsetting plan, developed in consultation with Fisheries and Oceans Canada, local commercial fishers, and the Nova Scotia Mi'kmaq.** **This approach contrasts with the JRP's approach, where in many instances in its report, it critiqued**

[1] Canada Environmental Assessment Agency, Black Point Quarry – Environmental Assessment Report at p. 59

[2] Health Canada's Submission for the Whites Point Quarry and Marine Terminal Project (13 June 2007), Tab. C 386 at p. 2

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
				the lack of detail in information provided by Bilcon
Wetlands				
Public / NGOs	It is clear that there will be direct and indirect impacts on wetlands. It is indicated that the proponent will compensate for lost wetland habitat function; it is not clear how initial assessments have analyzed wetland function. Also, how will complex wetland functions be recreated in a restored/constructed wetland? In order to assess impacts on habitat, water flows, etc. methods to compensate for this loss should be made public.	As part of the Environmental Impact Statement the proponent provided information in Appendix F on the 2010 / 2011 / 2014 Wetland Field Survey, Delineation and Functional Assessment Report. The Agency has been advised by the Province of Nova Scotia that if wetlands cannot be avoided, compensation is required through a wetlands-alteration approval consistent with the *Nova Scotia Wetland Conservation Policy*. Compensation plan details must be worked out well in advance of any wetland alteration application. Inquiries regarding the details of the wetland compensation methods should be directed to the Province of Nova Scotia.	No changes required.	**In WPQ, the JRP was concerned about the ability of mitigation measures proposed to protect the "ecological integrity and continuing viability of the wetland".** **In contrast, the Agency's BPQ response demonstrates that there was willingness, on the part of Nova Scotia, to accept compensation for the loss of wetlands**
Species at Risk – Risk of Vessel Collisions				
Transport Canada	Instead of stating speed limits for vessels in section 6.4.3, suggested the following wording, "requiring	The Agency agrees with the intent of the suggested modification; however, the speed limits provide	No changes required.	**In the WPQ JRP report, the JRP took issue with Bilcon's limited justification for its choice of vessel**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
	that vessels associated with the Designated Project respect speed profiles applicable to the operation of the Designated Project subject to navigational safety, to prevent or reduce the risks of collisions between project vessels and marine mammals."	guidance for the proponent on the expectations of the Agency.		**speed limits. The comments from Transport Canada and the Agency here demonstrate that the particular "speed limit" was not an issue. The fact that a particular speed limit was included as "guidance" further illustrate that if the JRP was concerned, it could have similarly provided speed limits it thought were necessary as guidance to Bilcon.**
Public / NGOs	Fin whales are known to frequent the area. Marine mammals are sensitive to noise pollution and could also be impacted by ship strikes. Recommend proponent be required to re-do its baseline monitoring for marine mammals, and that this monitoring continue to determine impacts once operations begin. Fisheries and Oceans expressed concern that a lack of observation effort would explain lack of sightings of fin whales, which frequent the area in search of herring and mackerel in winter and spring.	The Agency has identified several measures to mitigate and monitor the potential for ship strikes on fin whales and other species, including: • Implementing measures during operations to mitigate the risk of collisions between vessels and marine mammals and sea turtles taking into consideration the *Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas*; • Requiring that vessels associated with the Designated Project respect speed limits to prevent or reduce the risks of collisions between project vessels and marine mammals; and	No changes required.	**In WPQ, the JRP had concerns on these issues.** **While similar concerns were raised by the comment in BPQ, the Agency's response demonstrates that concerns could be addressed by its recommended mitigation measures, some of which were even mitigation measures proposed by Bilcon**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
		• Conducting and recording observations for marine mammals and sea turtles during vessel transit between shipping lanes and the marine terminal		
Commercial Fisheries – Potential Interference From Additional Marine Traffic				
Indigenous Group	Additional marine traffic may impact the fishery.	The Agency assessed the impact of the additional marine traffic between the established shipping lanes and the proposed marine terminal. The proponent, in consultation with local fishers, altered its shipping route to avoid preferred shrimping grounds. In addition, it would ensure on-going communication with representatives of the local fishing community, Sipekne'katik First Nation, and the Kwilmu'kw Maw-klusuaqn Negotiation Office. The Agency is satisfied that with the implementation of the proposed mitigation, impacts on the fishery would be adequately mitigated.	No changes required.	**In WPQ, one of Bilcon's proposed mitigation measures was to define vessel approach/departure routes in consultation with fishermen. This approach was similar to the Agency response and would have been able to address similar concerns noted by the JRP, which are set out below:** Berthing and loading a ship could involve potential impacts on fishing activities in the area between the site and the shipping lanes: ships have the potential to interfere with gear and influence traditional fishing, harvesting or whale watching activities.[3]

[3] WPQ JRP Report, at p. 60

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
Current Use of Lands and Resources by Aboriginal Peoples for Traditional Purposes				
Department of Fisheries and Oceans	The proponent's commitment to conduct a Mi'kmaq Fisheries Study should be included in Appendix E in consideration of the lack of clarity around Food Social Ceremonial fisheries in the environmental assessment documents.	The Agency agrees that conducting a Mi'kmaq Fisheries Study is a key follow-up measure. Based on the information available, the Agency remains confident in its Environmental Assessment determination.	Change made to Appendix E, section 6.6.3 and section 8.3.	**The Department of Fisheries and Oceans here explicitly acknowledged that there was a "lack of clarity around the Food Social Ceremonial fisheries in the environmental assessment". Yet, DFO's approach recommended the Agency include the proponent's commitment to conduct the Mik'maq Fisheries Study in Appendix E (List of Key Mitigation Measures, Monitoring and Follow Up Considered by the Agency). Such an approach is in sharp contrast to the JRP's approach in WPQ, which insisted on certainty, and criticized on many occasions, the lack of details and clarity in Bilcon's EIS but failed to recognize how terms and conditions on further follow-up measures could have imposed to address uncertainties.**
Public / NGOs	The complete Mi'kmaq Fisheries Study should be presented first to indigenous groups consulted as part of this assessment, and then made public to assess potential impacts on commercial and social/food fishing in the area. This should occur before the Project is approved.	The Agency agrees that conducting a Mi'kmaq Fisheries Study is a key follow-up measure. The study will be completed prior to construction. Once completed, the proponent will share the results of the study with the Aboriginal groups.	Change made to section 6.6.3, section 8.3, and Appendix E.	**In addition to comment above, it is notable that the Agency was willing to proceed to recommend that the project be approved notwithstanding the public / NGO's comment asking that the study be presented first as part of the assessment. The Agency's response here further demonstrates that it is**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
				not uncommon for information to be provided at a stage following EA acceptance.
Public / NGOs	Studies of plants and surveys for endangered mainland moose should be completed before approval occurs.	In addition to the plant studies the proponent conducted as part of the Environmental Assessment, the proponent shall notify Aboriginal groups in advance of vegetation clearing to allow Aboriginal groups to catalogue, harvest, and transplant species of importance. The Agency has identified the need for follow-up surveys for mainland moose, involving the Nova Scotia Mi'kmaq.	No changes required.	**See comment above**
Physical or Cultural Heritage and Historical, Archaeological, Paleontological or Architectural Sites or Structures				
Tourism and Recreation				
Individual	Concern that the Project would have a negative impact on the local campground at Fox Island due to dust, noise and potential contamination of swimming water. Property values near the site could be severely negatively affected by the Project.	The Agency's analysis with respect to tourism and recreation specifically focused on the effects from the marine terminal (e.g. dust, light), consistent with section 5(2) of CEAA 2012, and is included in section 6.8 of this report. The Agency recommended that the proponent mitigate and monitor	No changes required.	**The concerns of the individual is comparable with concerns noted by the JRP. But unlike the JRP, the Agency's response did not require any special mitigation measure to address the specific concerns. Instead, the Agency found that mitigation measures to mitigate and monitor potential effects of lights,**

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
		potential effects of lights, noise and air emissions. This comment has been forwarded to the Province of Nova Scotia for further consideration.		**noise and air emission were sufficient.**
Accidents and Malfunctions				
Public / NGOs	Proponent should be required to perform simulations of ship approaches to the marine terminal in order to prevent accidents.	The Agency, based on advice from Transport Canada, asked the proponent if it has done any vessel approach simulations. The proponent confirmed that the Project had been discussed with the Atlantic Pilotage Authority. Simulations have not been conducted to date but may be initiated at the detailed design stage following the environmental assessment. The Atlantic Pilotage Authority is a federal Crown Corporation that works with ports, the shipping industry, and other stakeholders to provide the safest and most efficient marine pilotage service possible to Atlantic Canada.	No changes required.	**The recognition by the Agency that "Simulations have not been conducted to date but may be initiated at a detailed design stage following the environmental assessment" contrasts sharply with the approach by the JRP below which criticized the lack of detail in Bilcon's EIS.** With high winds, when docking would not be possible, the ship would be forced to hold a position, steam a prescribed route or move back into the less confining Gulf of Maine to wait for improvement in the weather. The EIS did not detail procedures pertaining to these choices, particularly as they apply to the potential threat they could pose to whales, known to be reasonably

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
				abundant in the region where these activities could occur.[4]
Impacts on Potential or Established Aboriginal or Treaty Rights				
Indigenous Group	A compensation plan/agreement should be developed prior to marine activity to ensure any loss of Sipekne'katik fishing gear is addressed in a timely manner by the proponent. This should address both commercial and food, social and ceremonial fisheries.	The Agency has noted the proponent's commitment to compensate for gear damage or loss that is demonstrably caused by a project-related vessel and has made the proponent aware of the comment.	No changes required.	**Here, the Agency was satisfied that the proponent had committed to compensate for gear damage or loss caused by project-related vessel. It did not question the proponent's commitment nor insist that such an assertion be supported. In contrast the JRP in WPQ did criticize Bilcon,** despite Bilcon's commitment that it would provide compensation for the loss of fishing gear, which was made clear in its EIS,[5] its responses to Information Requests, and again at the hearing[6].
Groundwater				
Individual	The documentation does not appear to be clear on the depths and configurations of the quarry at various phases of development, and of the final configuration of	Detailed plans would be provided to the Province of Nova Scotia and the Province of Nova Scotia would require the proponent to conduct groundwater monitoring to	No changes required.	**This is another instance where the Agency accepted that detailed plans would be provided at a later stage.** **In WPQ, Bilcon's proposed mitigation measures included**

[4] *Ibid* at p. 58

[5] WPQ EIS, Chapter 9.3, Exhibit C-001 at p. 21; WPQ Response to Information Requests, Chapter 8.1 at p. 42;

[6] JRP Hearing Transcript, Volume 2, p. 253:10-14

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
	the pit and pit-lake at the end of development, especially in relation to sea level. A more detailed description with cross sections (N-S and W-E) would be helpful.	determine the freshwater-seawater interface at locations between the excavation and the coast.		**conducting groundwater monitoring and water quality monitoring.[7] At the JRP Hearing, Bilcon repeated its commitment to install a monitoring well in consultation with Nova Scotia.[8] However, the JRP ignored those commitments and insisted on a detailed plan:** "In the absence of extensive additional data from new and existing test wells, many of the uncertainties about groundwater remain very difficult to address, but the Panel believes that in the long term the quarry would negatively impact the yields of wells near the project site."
Decommissioning				
Individual	It was recommended that the post-decommissioning long term effects and monitoring should be better defined.	In accordance with the requirements of the *Nova Scotia Pit and Quarry Guidelines* (NSEL 1999), the proponent would prepare a rehabilitation plan as part of the provincial Industrial Approval application. This plan is a written document approved by Nova Scotia Environment Department to provide for partial or total	No changes required.	**As the Agency's response demonstrates, similar concerns in WPQ would have also been addressed by standard conditions pertaining to rehabilitation and decommissioning that is often included in Nova Scotia's terms and conditions as a requirement for further licensing approvals.**

[7] WPQ EIS, Chapter 9.1.3 at p. 29; Bilcon Responses to Information Requests, Chapter 8.1, Table 3.2 at p. 11
[8] JRP Hearing Transcript Volume 6, p. 1186: 5-11

Comment Source	Comment on the BPQ draft EAR (prepared by the CEA Agency)	Canadian Environmental Assessment Agency Response	Changes to CEA Agency Environmental Assessment Report	David Estrin's Comment on how the CEA Agency's Treatment of Public Comments Contrasted to the WPQ JRP's Approach
		abandonment of the pit or quarry and may include an initial rehabilitation plan, progressive rehabilitation or a final rehabilitation plan. The comment was shared with the Province of Nova Scotia and the proponent for further consideration.		
Public Comments				
Individual	Comment that she was never contacted by phone, mail or site visit seeking her opinion, contrary to what has been claimed in the report.	Comment noted. Public comment periods conducted by the Agency in relation to the environmental assessment of this Project were advertised in local newspapers, on the radio and on its website.	No changes required.	**The Agency did not take issue with this comment. In contrast, the JRP used similar concerns to subsequently criticize the accuracy and reliability of evidence provided in Bilcon's EIS.** Although the Proponent indicated that it had consulted local fishers, the fishers and several representatives of fishing organizations stated in the hearings that they had not been consulted. The accuracy and reliability of evidence provided in an EIS is fundamental to the validity and integrity of the environmental assessment process. The Panel concludes that some elements of the EIS may be inaccurate.

Appendix F to Reply Expert Report of David Estrin

BLACK POINT QUARRY PROJECT FEDERAL DECISION STATEMENT ISSUED UNDER SECTION 54 OF THE *CANADIAN ENVIRONMENTAL ASSESSMENT ACT, 2012* (APRIL 26, 2016)

Decision Statement
Issued under Section 54 of the *Canadian Environmental Assessment Act, 2012*

to
Black Point Aggregates Incorporated
c/o Frank Lieth, Vice President

1969 Upper Water Street Suite 1300, Purdy's Wharf Tower II
Halifax, Nova Scotia
B3J 3R7

for the
Black Point Quarry Project

Description of the Designated Project

Black Point Aggregates Incorporated, a wholly owned subsidiary of Vulcan Materials Company, is proposing the construction, operation and decommissioning of a granite quarry at Black Point in Guysborough County, Nova Scotia, and the construction and operation of a 200 metre-long marine terminal and load-out facility, adjacent to the quarry, in Chedabucto Bay. The quarry is expected to have a production capacity of up to 7.5 million tonnes of granite per year, over a mine life of approximately 50 years.

Conduct of the environmental assessment

The Canadian Environmental Assessment Agency (the Agency) conducted an environmental assessment of the Designated Project in accordance with the requirements of the *Canadian Environmental Assessment Act, 2012*. The Agency commenced the environmental assessment on April 28, 2014 and submitted its report to me in my capacity as Minister of Environment and Climate Change.

Decision on environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*

In accordance with paragraph 52(1)(a) of the *Canadian Environmental Assessment Act, 2012*, after considering the report of the Agency on the Designated Project and the implementation of mitigation measures that I consider appropriate, I have determined that the Designated Project is not likely to cause significant adverse environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*.

In accordance with subsection 53(1) of the *Canadian Environmental Assessment Act, 2012*, I have established the conditions below in relation to the environmental effects referred to in subsection 5(1) of the *Canadian Environmental Assessment Act, 2012*, with which the Proponent must comply.

Decision on environmental effects referred to in subsection 5(2) of the *Canadian Environmental Assessment Act, 2012*

The carrying out of the Designated Project may require the following federal authorities to exercise a power or perform a duty or function conferred on them under an Act of Parliament other than the *Canadian Environmental Assessment Act, 2012*:

- The Minister of Fisheries and Oceans may issue authorization(s) under paragraph 35(2)(b) of the *Fisheries Act*.
- The Minister of Transport may approve works in and about navigable waters under subsection 6(1) of the *Navigation Protection Act*.

In accordance with paragraph 52(1)(b) of the *Canadian Environmental Assessment Act, 2012*, after considering the report of the Agency on the Designated Project and the implementation of mitigation measures that I consider appropriate, I have determined that the Designated Project is not likely to cause significant adverse environmental effects referred to in subsection 5(2) of the *Canadian Environmental Assessment Act, 2012*.

In accordance with subsection 53(2) of the *Canadian Environmental Assessment Act, 2012*, I have established the conditions below in relation to the environmental effects referred to in subsection 5(2) of the *Canadian Environmental Assessment Act, 2012*, with which the Proponent must comply.

1 Definitions

1.1 *Agency* means the Canadian Environmental Assessment Agency.

1.2 *Baseline* means the environmental conditions prior to initiating construction of the Designated Project.

1.3 *Construction* means the phase of the Designated Project when site preparation, building or installation of any components of the Designated Project are undertaken by the Proponent.

1.4 *Days* means calendar days.

1.5 *Decommissioning* means the phase of the Designated Project where the Proponent has permanently ceased commercial production and has commenced removal from service of any components of the Designated Project, and continues until the site is restored.

1.6 *Deleterious substance* means "deleterious substance" as defined in section 34 of the *Fisheries Act*.

1.7 *Designated Project* means the Black Point Quarry Project as described in section 2 of the environmental assessment report prepared by the Canadian Environmental Assessment Agency (Canadian Environmental Assessment Registry Reference Number 80064).

1.8 *Environment and Climate Change Canada* means the Department of the Environment as established under subsection 2(1) of the *Department of the Environment Act*.

1.9 *Environmental effects* means "environmental effects" as described in section 5 of the *Canadian Environmental Assessment Act, 2012*.

1.10 *Fish* means "fish" as defined in subsection 2(1) of the *Fisheries Act*.

1.11 *Fish habitat* means "fish habitat" as defined in subsection 2(1) of the *Fisheries Act*.

1.12 *Fisheries and Oceans Canada* means the Department of Fisheries and Oceans as established under subsection 2(1) of the *Department of Fisheries and Oceans Act*.

1.13 *Follow-up program* means "follow-up program" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.

1.14 *Heritage value* means the aesthetic, historic, scientific, cultural, social or spiritual importance or significance for past, present or future generations.

1.15 *Indigenous groups* means Membertou, Glooscap, Acadia, Annapolis Valley, Eskasoni, L'sitkuk (Bear River), Millbrook, Paqtnkek, Pictou Landing, Potlotek, Wagmatcook and Waycobah Mi'kmaq First Nations, represented by the Kwilmu'kw Maw-klusuaqn (Mi'kmaq Rights Initiative) Negotiation Office, and Sipekne'katik First Nation in Nova Scotia.

1.16 *Listed species at risk* means a species that is listed on the List of Wildlife Species at Risk set out in Schedule 1 of the *Species at Risk Act*.

1.17 *Migratory bird* means "migratory bird" as defined in subsection 2(1) of the *Migratory Birds Convention Act, 1994*.

1.18 *Mitigation measures* means "mitigation measures" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012*.

1.19 *Offsetting plan* means "offsetting plan" as defined in section 1 of the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*.

1.20 *Operation* means the phase of the Designated Project during which the commercial production takes place.

1.21 *Progressive reclamation* means a planned approach to reclamation which is carried out concurrently with all phases of the Designated Project to progressively return any physically disturbed areas to a state as close to the baseline as possible, as soon after the disturbance as practical.

1.22 *Project area* means the geographic area occupied by the Designated Project.

1.23 *Proponent* means Black Point Aggregates Incorporated and its successors or assigns.

1.24 *Qualified individual* means someone who, through education, experience and knowledge relevant to a particular matter, may be relied on by the Proponent to provide advice within his or her area of expertise.

1.25 *Record* means "record" as defined in subsection 2(1) of the *Canadian Environmental Assessment Act, 2012.*

1.26 *Reporting year* means from April 1 of a calendar year through March 31 of the subsequent calendar year.

1.27 *Species of importance* means species harvested for traditional, medicinal and subsistence purposes by Indigenous groups as well as wood and wood products, including caraway seeds (*Carum carvi*), hazelnuts (*Corylus avellana*), chokecherries (*Prunus virginiana var. virginiana*), strawberries, (*Fragaria vesca*), blueberries (*Vaccinium corymbos*um), cranberries (*Vaccinium oxycoccos*), fox berries (*Vaccinium vitis-idaea*), Labrador tea (*Ledum groenlandicum)*, maple (*Acer spp.*) and birch bark (*Betula spp.).*

1.28 *Structure, site or thing of historical, archaeological, paleontological or architectural significance* means a structure, site or thing that is determined, on the basis of heritage value, to be directly associated with an important aspect or aspects of human history or culture.

1.29 *Wetlands* means land saturated with water long enough to promote formation of water altered soils, growth of water-tolerant vegetation and various kinds of biological activity that is adapted to the wet environment and separated into five classes: fen, bog, marsh, swamp, and shallow open water wetlands (includes open water areas less than two metres deep with wetland characteristics).

1.30 *Wetland functions* means the natural processes and derivation of benefits and values associated with wetland ecosystems, fish and wildlife habitat, organic carbon storage, water supply and purification (e.g. groundwater recharge, flood control, maintenance of flow regimes, shoreline erosion buffering), and soil and water conservation, as well as traditional use, tourism, heritage, recreational, educational, scientific, and aesthetic opportunities.

Conditions

These conditions are established for the sole purpose of the Decision Statement issued under the *Canadian Environmental Assessment Act, 2012*. They do not relieve the Proponent from any obligation to comply with other legislative or other legal requirements of the federal, provincial, or local governments. Nothing in this Decision Statement shall be construed as reducing, increasing, or otherwise affecting what may be required of the Proponent to comply with all applicable legislative or legal requirements.

2 General conditions

2.1 The Proponent shall, throughout all phases of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are considered in a careful and precautionary manner, promote sustainable development, are informed by the best available information and knowledge, including community and Indigenous traditional knowledge, are based on validated methods and models, are undertaken by qualified individuals and have applied the best available economically and technologically feasible mitigation measures.

2.2 The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:

2.2.1 provide a written notice of the opportunity for the party or parties being consulted to present their views and information on the subject of the consultation;

2.2.2 provide sufficient information and a reasonable period of time to permit the party or parties being consulted to prepare their views and information;

2.2.3 provide a full and impartial consideration of any views and information presented by the party or parties being consulted; and

2.2.4 advise the party or parties that have provided comments on how the views and information received have been considered by the Proponent.

2.3 The Proponent shall, where consultation with Indigenous groups is a requirement of a condition set out in this Decision Statement, and prior to initiating that consultation, communicate with each Indigenous group to determine the manner by which to satisfy the consultation requirements referred to in condition 2.2, including methods of notification, the type of information and the period of time to be provided when seeking input, the process for full and impartial consideration of any views and information presented and the means by which each Indigenous group will be informed of how the views and information received have been considered by the Proponent.

2.4 The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement:

2.4.1 undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);

2.4.2 determine whether additional mitigation measures are required based on the monitoring and analysis undertaken pursuant to condition 2.4.1; and

2.4.3 if additional mitigation measures are required pursuant to condition 2.4.2, implement the additional mitigation measures and monitor them pursuant to condition 2.4.1.

2.5 Where consultation with Indigenous groups is a requirement of a follow-up program, the Proponent shall discuss with each Indigenous group opportunities for the participation of that Indigenous group in the implementation of the follow-up program as set out in condition 2.4.

2.6 The Proponent shall, commencing in the reporting year that implementation of the conditions set out in this Decision Statement begins, prepare an annual report that sets out:

2.6.1 the activities undertaken in the reporting year to comply with each of the conditions set out in this Decision Statement;

2.6.2 how the Proponent complied with condition 2.1;

2.6.3 for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent considered any views and information that the Proponent received during or as a result of the consultation;

2.6.4 the results of the follow-up program requirements identified in conditions 3.2, 3.8, 4.7, 5.7, 5.8 and 5.9; and

2.6.5 any additional mitigation measures implemented or proposed to be implemented by the Proponent, as determined under condition 2.4.

2.7 The Proponent shall submit to the Agency the annual report referred to in condition 2.6, including an executive summary in both official languages, no later than June 30 following the reporting year to which the annual report applies.

2.8 The Proponent shall publish on the Internet, or any medium which is widely publicly available, the annual report and the executive summaries referred to in conditions 2.6 and 2.7, the plan to offset the loss of fish and fish habitat referred to in condition 3.3, the communication plans referred to in conditions 5.3 and 7.5, the cultural resource management plan referred to in condition 6.1, the reports referred to in conditions 7.4.3 and 7.4.4 and the implementation schedule referred to in condition 8.1 and any update(s) or revision(s) to the above documents, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available for 25 years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the Agency and Indigenous groups of the availability of these documents once they are published.

2.9 The Proponent shall notify the Agency and Indigenous groups in writing no later than 60 days after the day on which there is a transfer of ownership, care, control or management of the Designated Project in whole or in part.

2.10 The Proponent shall consult with Indigenous groups prior to initiating any material change(s) to the Designated Project that may result in adverse environmental effects, and shall notify the Agency in writing no later than 60 days prior to initiating the change(s).

2.11 In notifying the Agency pursuant to condition 2.10, the Proponent shall provide the Agency with an analysis of the adverse environmental effects of the change(s) to the Designated Project, as well as the results of the consultation with Indigenous groups.

3 Fish and fish habitat

3.1 The Proponent shall implement all reasonable measures to prevent and mitigate adverse environmental effects on fish and fish habitat from changes to water quality during all phases of the Designated Project in compliance with the *Fisheries Act* regarding the deposition of a deleterious substance and taking into account the Nova Scotia *Pit and Quarry Guidelines*. The measures shall include:

3.1.1 measures to control erosion and limit run-off;

3.1.2 measures to capture and treat run-off prior to discharge into the environment; and

3.1.3 a 30-metre minimum distance from the overburden stockpiles, the fuel and chemical storage facilities, and the construction equipment to any water body.

3.2 The Proponent shall develop and implement, in consultation with the relevant federal and provincial authorities, a surface water follow-up program to verify the effectiveness of the mitigation measures referred to in condition 3.1.

3.3 The Proponent shall develop and implement any required offsetting plan related to the loss of fish and fish habitat associated with the carrying out of the Designated Project in consultation with Fisheries and Oceans Canada, local commercial fishers and Indigenous groups. The Proponent shall develop the offsetting plan prior to construction. The plan shall identify the timelines for reporting the results of the offsetting activities to Indigenous groups and local commercial fishers.

3.4 For any fish habitat offset areas proposed in any offsetting plan under condition 3.3, and prior to submitting the offsetting plan to Fisheries and Oceans Canada, the Proponent shall determine whether there are adverse effects on:

3.4.1 migratory birds and their habitats;

3.4.2 listed species at risk and their habitats;

3.4.3 the current use of lands and resources for traditional purposes;

3.4.4 the flow rates, water depths or water widths that may affect the passage of a vessel, including a vessel used by Indigenous Peoples in the context of their current use of lands and resources for traditional purposes; and

3.4.5 physical and cultural heritage and structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

3.5 The Proponent shall, if there are adverse effects on any of the elements set out in conditions 3.4.1 to 3.4.5 avoid or lessen those effects.

3.6 For Designated Project-related vessels transiting between shipping lanes and the marine terminal, the Proponent shall implement measures to mitigate the risk of collisions with whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles taking into account the *Notice for Mariners General Guidelines for Aquatic Species at Risk and Important Marine Mammal Areas*. The measures shall include:

3.6.1 conducting and recording observations for whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles;

3.6.2 requiring that vessels respect speed profile applicable to the operation of the Designated Project subject to navigational safety, to prevent or reduce the risk of collisions between vessels and whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles; and

3.6.3 reporting collisions with whales, Harbour Porpoise (*Phocoena phocoena*) and sea turtles within 2 hours to the Canadian Coast Guard, and notifying Indigenous groups in writing.

3.7 The Proponent shall, unless otherwise authorized under the *Fisheries Act,* implement measures to prevent or avoid the destruction of fish, or any potentially harmful effects to fish habitat, during all phases of the Designated Project when using explosives in or around water frequented by fish and shall conduct blasting by taking into consideration Fisheries and Oceans Canada's *Measures to Avoid Causing Harm to Fish and Fish Habitat* and the *Nova Scotia Pit and Quarry Guidelines*.

3.8 The Proponent shall develop and implement a follow-up program in consultation with Fisheries and Oceans Canada and Indigenous groups, to verify the Designated Project will not result in loss of fish or fish habitat in Reynolds Brook upstream of Hendsbee Lake. The follow-up program shall include:

3.8.1 a pre-construction fish and fish habitat field survey in Reynolds Brook upstream of Hendsbee Lake. If the presence of fish or fish habitat is confirmed, the Proponent shall:

3.8.1.1 determine the water flow and water levels, including seasonal variations, that are required to maintain fish habitat in Reynolds Brook upstream of Hendsbee Lake; and

3.8.1.2 monitor water flow and water levels in Reynolds Brook upstream of Hendsbee Lake during construction and operation phases, and implement any measures required to maintain the water flow and water levels determined in 3.8.1.1.

4 Migratory birds

4.1 The Proponent shall carry out all phases of the Designated Project in a manner that protects migratory birds and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment and Climate Change Canada's *Avoidance Guidelines*. The Proponent's actions in applying the *Avoidance Guidelines* shall be in compliance with the *Migratory Birds Convention Act, 1994* and with the *Species at Risk Act*.

4.2 The Proponent shall not clear vegetation within 30 metres of the coastal high water mark with the exception of the location where the ship loading conveyor and the marine terminal transect this area. The Proponent shall also not clear vegetation in the control zone between 30 and 75 metres from the coastal high water mark except where needed to install and maintain erosion and sediment discharge control measures, for the access road, the ship loading conveyor, and the marine terminal.

4.3 The Proponent shall mitigate the adverse environmental effects of the Designated Project on wetland functions that support migratory birds. The Proponent shall give preference to avoiding the loss of wetlands over minimizing the effects on wetlands and to minimizing the effects on wetlands over compensating for lost or adversely affected wetlands. For effects on wetlands that cannot be avoided or minimized, the Proponent shall, in consultation with Indigenous groups and relevant provincial and federal authorities, compensate for wetland functions lost.

4.4 The Proponent shall control lighting required for the construction, operation and decommissioning of the Designated Project including direction, timing, and intensity to avoid effects on migratory birds, while meeting health and safety requirements.

4.5 The Proponent shall install line marking devices along the transmission line connecting the Designated Project to the existing transmission line.

4.6 The Proponent shall take into consideration Environment and Climate Change Canada's *Best practices for stranded birds encountered offshore Atlantic Canada* when stranded birds are encountered on Designated Project-related vessels.

4.7 The Proponent shall develop prior to construction and implement, during all phases of the Designated Project, a follow-up program to determine the effectiveness of the mitigation measures used to avoid harm to migratory birds, their eggs and nests, including the measures used to comply with conditions 4.1 to 4.6.

5 Current use of lands and resources for traditional purposes and socio-economic conditions

5.1 The Proponent shall notify Indigenous groups and local commercial fishers at least 30 days in advance of in-water construction activities.

5.2 The Proponent shall, prior to operation and in consultation with Indigenous groups and local commercial fishers, establish transportation routes for Designated Project-related vessels between the shipping lanes and the marine terminal in order to avoid shrimp trap areas.

5.3 The Proponent shall develop and implement a plan for communicating with Indigenous groups to minimize interaction between Designated Project-related vessels and Indigenous groups. The plan shall be developed prior to construction and include procedures and practices for sharing information on the following:

5.3.1 location and timing of Designated Project-related activities;

5.3.2 location and timing of traditional fishing activities by Indigenous groups; and

5.3.3 ways in which Indigenous groups can provide feedback to the Proponent about adverse environmental effects related to Designated Project-related marine traffic.

5.4 The Proponent shall notify Indigenous groups at least 60 days in advance of vegetation clearing to allow Indigenous groups to catalogue, harvest, and transplant species of importance.

5.5 The Proponent shall, in consultation with Indigenous groups, undertake progressive reclamation of the habitats impacted by the Designated Project by using species that typified the plant communities prior to construction, including plant species of importance to Indigenous groups.

5.6 The Proponent shall implement noise and dust reduction measures during all phases of the Designated Project including:

5.6.1 restricting operating hours for the quarry and processing plants to no more than 16 hours per day;

5.6.2 restricting blasting to daytime hours and weekdays;

5.6.3 applying dust suppressant on all disturbed areas and roads during activities with the potential for generating dust; and

5.6.4 suspending activities during periods of sustained winds greater than 30 kilometres per hour where fugitive dust emissions cannot be controlled.

5.7 The Proponent shall develop and implement a follow-up program to verify the accuracy of the environmental assessment as it pertains to dust and noise levels. The Proponent shall consider the methodologies described in the *Nova Scotia Pit and Quarry Guidelines* when developing and implementing the program.

5.8 The Proponent shall develop and implement a follow-up program to verify the accuracy of the environmental assessment as it pertains to the effects of the Designated Project on mainland moose (*Alces alces americana*). The Proponent shall conduct field surveys in consultation with the Indigenous groups to monitor the presence of mainland moose (*Alces alces americana*) and its habitat use in the Project area.

5.9 The Proponent shall develop prior to construction and implement during all phases of the Designated Project, a follow-up program to verify the accuracy of the environmental assessment as it pertains to the effects of the Designated Project on fisheries used for food, social and ceremonial purposes by Indigenous groups. The Proponent shall develop and implement the follow-up program in consultation with Indigenous groups, and shall report the results to Indigenous groups.

6 Physical and cultural heritage, and structure, site or thing of historical, archaeological, paleontological or architectural significance

6.1 Prior to construction, the Proponent shall develop, in consultation with Indigenous groups and the province of Nova Scotia, a cultural resource management plan to conduct additional archaeological work in the areas that may be disturbed during construction. The Proponent shall outline the methodologies and timing of the additional archeological work in the plan and shall implement it during all phases of the Designated Project.

6.2 In the event that archaeological and heritage resources are discovered, the Proponent shall:

6.2.1 immediately halt work at the location of the discovery;

6.2.2 have a qualified individual conduct an assessment at the location of the discovery;

6.2.3 inform, forthwith, in writing, Indigenous groups of the discovery, and allow for monitoring by Indigenous groups during archeological work; and

6.2.4 comply with any legislative or legal requirements respecting the discovery of archaeological and heritage resources.

7 Accidents or malfunctions

7.1 The Proponent shall take all reasonable measures to prevent accidents or malfunctions that may result in adverse environmental effects.

7.2 The Proponent shall, prior to construction, consult with Indigenous groups on the measures to be implemented to prevent accidents or malfunctions.

7.3 The Proponent shall, prior to construction and in consultation with relevant federal and provincial authorities and Indigenous groups, develop an emergency response plan in relation to the Designated Project.

7.4 In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall implement the emergency response plan referred to in condition 7.3 and shall:

7.4.1 notify relevant federal and provincial authorities and Indigenous groups of the accident or malfunction as soon as possible and, in writing, the Agency;

7.4.2 implement immediate measures to mitigate any adverse environmental effects associated with the accident or malfunction;

7.4.3 submit a written report to the Agency no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:

7.4.3.1 a description of the accident or malfunction and of its adverse environmental effects;

7.4.3.2 the measures that were taken by the Proponent to mitigate the adverse environmental effects of the accident or malfunction;

7.4.3.3 any views received from relevant federal and provincial authorities and Indigenous groups with respect to the accident or malfunction, its adverse environmental effects or measures taken by the Proponent to mitigate adverse environmental effects;

7.4.3.4 a description of any residual adverse environmental effects, and any additional measures required by the Proponent to mitigate residual adverse environmental effects; and

7.4.3.5 details concerning the implementation of the emergency response plan referred to in condition 7.3.

7.4.4 submit a written report to the Agency no later than 90 days after the day on which the accident or malfunction took place, on the changes made to avoid a subsequent occurrence of the accident or malfunction, and on the implementation of any additional measures to mitigate residual adverse environmental effects taking into account the information in the written report submitted pursuant to condition 7.4.3.

7.5 The Proponent shall develop and implement a communication plan in consultation with Indigenous groups. The communication plan shall be developed prior to construction and shall be implemented and maintained up to date during all phases of the Designated Project. The plan shall include:

7.5.1 the types of accidents or malfunctions requiring a notification by the Proponent to the respective Indigenous groups;

7.5.2 the manner by which Indigenous groups shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Indigenous groups to assist in the response to the accident or malfunction; and

7.5.3 the contact information of the representatives of the Proponent that the Indigenous groups may contact and of the representatives of the respective Indigenous groups to which the Proponent provides notification.

8 Implementation schedule

8.1 The Proponent shall submit an implementation schedule for conditions contained in this Decision Statement to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, at least 30 days prior to the start of construction. The implementation schedule shall indicate the commencement and completion dates for each activity relating to conditions set out in this Decision Statement.

8.2 The Proponent shall submit an update to this implementation schedule in writing to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, every two years on or before June 30, until completion of the activities.

8.3 The Proponent shall provide the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, with a revised implementation schedule if any material change(s) occur from the initial schedule referred to in condition 8.1 or any subsequent update(s). The Proponent shall provide the revised implementation schedule at least 30 days prior to the implementation of the change.

9 Record keeping

9.1 The Proponent shall maintain all records relevant to the implementation of the conditions set out in this Decision Statement, including any records that the Agency or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012* may consider relevant. The proponent shall provide the aforementioned records to the Agency, or anyone designated pursuant to section 89 of the *Canadian Environmental Assessment Act, 2012*, upon demand within a timeframe specified by the Agency or the designated person.

9.2 The Proponent shall retain all records referred to in condition 9.1 at a facility in Canada. The records shall be retained and made available for 25 years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first. The Proponent shall notify the Agency at least 30 days prior to any change to the physical location of the facility where the records are retained, and shall provide the address of the new location.

Issuance

This Decision Statement is issued in Ottawa, Ontario by:

<Original signed by>

The Honourable Catherine McKenna

Minister of the Environment

April 26, 2016

Date

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Appendix G to Reply Expert Report of David Estrin

BLACK POINT QUARRY PROJECT PROVINCIAL ENVIRONMENTAL ASSESSMENT and TERMS AND CONDITIONS (APRIL 26, 2016)

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Appendix G to Reply Expert Report of David Estrin

BLACK POINT QUARRY PROJECT PROVINCIAL ENVIRONMENTAL ASSESSMENT and TERMS AND CONDITIONS (APRIL 26, 2016)

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NOVA SCOTIA
Environment
Office of the Minister

PO Box 442, Halifax, Nova Scotia, Canada B3J 2P8 • www.novascotia.ca/nse

Our File number:
40100-30-232
10700-40-50076

APR 2 6 2010

Mr. Frank Lieth, Vice President
1200 Urban Centre Drive
Birmingham, Alabama
USA 35242

Dear Mr. Lieth:

Re: Environmental Assessment – Black Point Aggregates Inc.
Black Point Quarry Project, Guysborough County, NS

The environmental assessment of the proposed Black Point Quarry Project in Guysborough County, Nova Scotia has been completed.

This is to advise that I have approved the above project in accordance with Section 40 of the *Nova Scotia Environment Act*, S.N.S., 1994-95 and subsection 13(1)(b) of the Environmental Assessment Regulations, N.S. Reg. 348/2008, made under the Act. Following a review of the information provided by Black Point Aggregates Inc., and the information provided during the government and public consultation of the environmental assessment, I am satisfied that any adverse effects or significant environmental effects of the undertaking can be adequately mitigated through compliance with the attached terms and conditions.

This approval is subject to any other approvals required by statute or regulation, including but not limited to, approval under Part V of the *Environment Act* (Approvals and Certificates section).

If you have any questions regarding the approval of this project, please contact Peter Geddes, Director, Policy and Planning, at (902) 424-6250 or via email at Peter.Geddes@novascotia.ca.

Sincerely,

Margaret Miller, MLA
Minister of Environment

Encl.
c: Peter Geddes

Environmental Assessment Approval

Approval Date: APR 2 6 2010

Black Point Quarry Project
Black Point Aggregates Inc., Approval Holder
Guysborough County, Nova Scotia

The Black Point Quarry Project (the "Undertaking"), proposed by Black Point Aggregates Inc. (the "Approval Holder"), Guysborough County, Nova Scotia is approved pursuant to Section 40 of the *Environment Act* and Section 13(1)(b) of the Environmental Assessment Regulations. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Registration Document.

Terms and Conditions for Environmental Assessment Approval

1.0 General Approval

1.1 The Environmental Assessment Approval for the Undertaking is limited to the project as described in the Registration Document. Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the Undertaking from that proposed in the Registration Document must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).

1.2 The Approval Holder must, within two years of the date of issuance of this approval, commence work on the Undertaking unless granted a written extension by the Minister.

1.3 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.

1.4 The Approval Holder must implement all mitigation and commitments in the Registration Document, unless approved otherwise by Nova Scotia Environment (NSE).

2.0 Surface Water Resources

2.1 The Approval Holder must not undertake any quarry related activities within 30 metres of a watercourse unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.

2.2 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval:

a) a surface water monitoring plan including sampling locations, parameters and frequency of sampling. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations to the satisfaction of NSE;

b) an erosion and sediment control plan;

c) a stormwater management plan including details regarding the plans for monitoring, maintenance and upgrading of the flow retention/siltation treatment areas. Design criteria must recognize increased likelihood of more intense precipitation events in coming decades and meet discharge criteria per NSE requirements ; and

d) details of pre- and post-development water quality and quantity monitoring program. Sampling methods and/or protocols must be provided to the satisfaction of NSE.

2.3 All surface water protection and management programs must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

3.0 Wetlands

3.1 The Approval Holder must provide GIS shape files and metadata for all wetlands that were delineated for this Undertaking, and for compensation purposes, to NS Department of Natural Resources (NSDNR)-Wildlife Division and the NSE Wetland Specialist.

3.2 The Approval Holder must not undertake any quarry related activities within 30 metres of a wetland unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted.

3.3 The Approval Holder must provide cross-drainage (not a single culvert) under roads through wetlands so that hydrologic linkages on both sides of the road are maintained.

3.4 Prior to application for a wetland alteration approval, the Approval Holder must develop a Wetland Compensation Plan. The Wetland Compensation Plan and associated reporting requirements must be developed to the standards as defined by NSE and establish specific objectives intended to prevent the net loss of wetlands in accordance with the Nova Scotia Wetland Conservation Policy.

Based on the results of the measures taken to offset losses of wetland and or wetland functions and services, the Approval Holder must make necessary modifications to compensation plans, and/or site operations, to the satisfaction of NSE.

3.5 The Approval Holder must implement and adhere to the Wetland Compensation Plan once finalized and approved by NSE.

3.6 Following the development of the Wetland Compensation Plan and prior to any wetland alteration, the Approval Holder must obtain an approval in accordance with the Activities Designation Regulations and the Approval and Notification Procedures Regulations.

3.7 The Approval Holder must develop and implement a wetland monitoring plan to be approved by the NSE Wetland Specialist.

4.0 Groundwater Resources

4.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval:

a) a groundwater monitoring program including the location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and

b) a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage (in consultation with NSE).

4.2 The Approval Holder must not excavate below mean sea level, unless otherwise approved by NSE.

4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of quarrying operations to the satisfaction of NSE.

5.0 Flora and Fauna

5.1 The Approval Holder must develop a lighting plan for the Undertaking area that minimizes and manages lighting impacts on migratory birds and breeding birds. The lighting management for operations should consider fog impacts exacerbated by lighting during mid-May through June 10th which is an especially sensitive window in spring migration. Any mortality of Leach's Storm Petrels must be reported to NSDNR-Wildlife Division and Canadian Wildlife Services immediately.

5.2 Prior to blasting, the Approval Holder must submit a blasting management plan developed in consultation with NSDNR-Wildlife Division, to NSE. This plan is to

optimize blasting and align a monitoring approach to determine impacts in relation to nesting seabirds.

5.3 The Approval Holder must maximize the coastal buffer (i.e. between the coastal shore side of the project and the Project components) to the satisfaction of NSE and NSDNR-Wildlife Division. The buffer must be a minimum of 30 metres in the plant operations areas and 75 metres in all other areas, except where needed for the access road; to install and maintain erosion and sediment discharge control measures; for the ship loading conveyor; and for the marine terminal. Native vegetation within the coastal buffer must not be disturbed.

5.4 Clearing and grubbing of vegetation must be conducted outside of the breeding season for most bird species (April 15 to August 15), unless otherwise approved by NSE.

5.5 Prior to construction, the Approval Holder must provide NSDNR-Wildlife Division with digital way points and shape files revealing precise locations for all S1, S2 and S3 Atlantic Canada Conservation Data Center listed species, identified during field work within the development area. The Approval Holder must report to NSE that the files have been provided to NSDNR-Wildlife Division.

6.0 Noise and Dust

6.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must provide for review and approval, a blasting plan. The plan must include a pre blast survey for structures and water supplies within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy as required by NSE.

6.2 The Approval Holder must develop and implement an air quality and/or dust monitoring plan, at the request of NSE. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

6.3 The Approval Holder must monitor noise levels, at the request of NSE. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

7.0 Archaeological and Heritage Resources

7.1 Prior to construction, the Approval Holder must develop and implement a Cultural Resource Management Plan and complete required additional archaeology work to the satisfaction and approval of Nova Scotia Department of Communities, Culture and Heritage.

7.2 The Approval Holder must cease work and contact the Special Places Coordinator, Cultural Heritage and Development Division, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artifact unearthed during any phase of the

Undertaking. If the find is of suspected or certain Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office and the Chief of Sipekne'katik First Nation.

8.0 Public Engagement

8.1 The Approval Holder must operate the Community Liaison Committee (CLC) for the duration of the Undertaking and until released in writing by NSE.

8.2 At the request of NSE, the Approval Holder must provide records of the CLC including meeting minutes, complaints and associated actions.

8.3 The Approval Holder must develop a complaint resolution plan to address all concerns associated with the Project. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.

9.0 First Nation and Aboriginal Engagement

9.1 The Approval Holder must develop and implement a Mi'kmaq Engagement Strategy for the Undertaking, which will include a process for a communicating project details and seeking input from the Mi'kmaq community.

10.0 Contingency Plans

10.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval a contingency plan that meets NSE's Contingency Planning Guidelines and addresses (including but not limited to):

a) accidental occurrences, and includes the location of spill equipment kept on-site and emergency phone numbers;

b) training to be delivered to staff, including contractors;

c) procedures for responding to incidents occurring during times when the facility is not staffed (e.g. evenings, weekends, holidays);

d) impacts to watercourses and water resources and domestic water supplies;

e) releases of dangerous goods or waste dangerous goods;

f) potential fire at the facility (to be reviewed and approved by the local fire and emergency service providers);

g) petroleum and hazardous material spills and surface water control structure failure;

h) impacts on birds and associated habitats on which they depend. The marine oil spill emergency measures plan and petroleum products management on the Undertaking site should be developed with NSE, Environment Canada-Canadian Wildlife Service and Fisheries and

Oceans Canada; and

i) such other information as required by NSE.

10.2 Contingency plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

10.3 Refuelling must not be conducted within 100 metres of any surface water resource, unless otherwise approved by NSE.

11.0 Quarry Development and Reclamation

11.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, shall provide for review and approval a preliminary reclamation plan that includes progressive reclamation and details of future land use.

11.2 Reclamation plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

11.3 Quarry operations must be completed and reclaimed to the satisfaction of NSE, NSDNR and other appropriate regulatory departments.

Margaret Miller, MLA
Minister of Environment