TECK FRONTIER PROJECT

FINAL ARGUMENT

ACFN	Athabasca Chipewyan First Nation
AER	Alberta Energy Regulator
Agency	Canadian Environmental Assessment Agency
BATEA	Best Available Technology Economically Achievable
BSA	Biodiversity Stewardship Area
CBA	Cost-Benefit Analysis
CEAA	Canadian Environmental Assessment Act, 2012
COSIA	Canada's Oil Sands Innovation Alliance
CPAWS	Canadian Parks and Wilderness Society
ECCC	Environment and Climate Change Canada
EIA	Environment Impact Assessment
ETA	External Tailings Area
GHG	Greenhouse Gas Emissions
IEEFA	Institute for Energy Economics and Financial Analysis
IFRS	International Financial Reporting Standards
IMO	International Maritime Organization
JRP	Joint Review Panel
JOSM	Joint Canada-Alberta Oil Sands Monitoring Program
LARP	Lower Athabasca Regional Plan
MCFN	Mikisew Cree First Nation

OSEC	Oil Sands Environmental Coalition
OFMFN	Original Fort McMurray First Nation
OUV	Outstanding Universal Value
PAD	Peace Athabasca Delta
PDA	Project Disturbance Area
PVA	Project Viability Analysis
RAMP	Oil Sands Regional Aquatic Monitoring Program
REDA	Responsible Energy Development Act
RMS	Reclamation Material Stockpiles
SARA	Species at Risk Act
SEA	Strategic Environmental Assessment
SEIA	Socio Economic Impact Assessment
SWQMF	Surface Water Quantity Management Framework
TBCS	Treasury Board of Canada Secretariat
WBNP	Wood Buffalo National Park
WCS	Western Canada Select
WTI	West Texas Intermediate

TECK FRONTIER PROJECT

FINAL ARGUMENT

I. INTRODUCTION

1. Mr. Chairman, as everyone in this room is well aware, development of Alberta's extensive oil sands resources, in the public interest – to benefit all Albertans and Canadians – on balance is not an easy and straightforward task. It requires financial strength – to provide the financial wherewithal to capitalize and execute a multi-billion dollar project; technical expertise – to ensure optimal resource conservation and value-added processes are constantly reviewed and improved; Environmental responsibility – to ensure environmental impacts of development are avoided, minimized or mitigated; and social responsibility – to ensure all of this is carried out in a manner that provides information to Indigenous communities and stakeholders, involves them in decisions that affect them, and provide assistance and advice where appropriate.

2. Teck embodies all those traits. As was stated by Mr. McFadyen in his opening statement, Teck values open, respectful and professional engagement throughout this application process.[1] Teck operates in accordance with its six

[1] Transcript Vol 1, 35, lines 5-6.

core values of safety, integrity, respect, excellence, courage and sustainability.[2] The result – is that Teck has signed 14 out of 14 agreements with Indigenous communities most affected by this Project. This is testament to the comprehensive approach and dedicated effort put forward by Teck over a decade of consultation. In addition, Mr. Chair, Teck has support from parties such as the Regional Municipality of Wood Buffalo,[3] the International Brotherhood of Electrical Workers Local 424,[4] and the International Brotherhood of Boilermakers Local Lodge 146.[5]

II. NATURE OF THE APPLICATION

3. Sir, the application before the Panel is regarding the Frontier Project, which, as was discussed by Mr. McFadyen during his opening statement, is a proposed truck and shovel oil sands mine located 110 km south of Fort Chipewyan, recovering roughly 3.2 billion barrels of bitumen over 41 years.[6] Once fully constructed, Teck aims to operate at a production rate of 260,000 barrels per day.[7] This translates to up to 7,000 direct jobs during the

[2] Transcript Vol 1, 38, lines 1-13.

[3] Transcript Vol 14, 2748 line 7 to 2755 line 22.

[4] Transcript Vol 7, 1401 line 18 to 1403 line 20.

[5] Transcript Vol 7, 1404 line 7 to 1407 line 17.

[6] Transcript Vol 1, 44-45.

[7] Transcript Vol 1, 45, lines 8-10.

construction phase and a further two and a half thousand ongoing jobs during the mine life;[8] and over $70 billion of direct government revenues over the mine life.[9]

4. Teck's application for the Frontier Project today includes the recovery of the entire resource base with no future expansions contemplated. In the interest of transparency, Teck has applied for the project in its entirety – what is in the application is what Alberta and Canada can expect for the life of Frontier.

III. FRAMEWORK FOR THE REVIEW

5. Mr. Chairman, it is important to review the legal framework the Joint Review Panel is operating under and the dual roles and responsibilities of this Panel.

A. JOINT PROCESS

6. On recommendation from the Canadian Environmental Assessment Agency, or the Agency, the Federal Minister of the Environment and Climate Change referred the review of the Frontier Project to an environmental assessment by an independent review panel. An agreement was entered into by the Alberta Energy Regulator, or AER, and the Government of Canada on May 24, 2016,

[8] Transcript Vol 1, 48, lines 4-8.

[9] Transcript Vol 1, 48, line 16.

to allow a joint review of the Project, and an amended agreement was issued on August 24, 2017.[10]

7. The Agreement was established in accordance with the "Canada-Alberta Agreement for Environmental Assessment Cooperation" and sets out the mandate and authority of the Joint Review Panel, its composition and project review guidelines. This joint review must satisfy the requirements of both the *Canadian Environmental Assessment Act, 2012*[11] and the Alberta *Responsible Energy Development Act*[12] and the panel has distinct obligations under each Act.

B. THE JOINT REVIEW PANEL'S ROLE AS THE AER

8. As the AER, the Joint Review Panel's mandate, pursuant to section 2 of the *Responsible Energy Development Act*, is:

   (a) To provide for the efficient, safe, orderly and environmentally responsible development of energy resources in Alberta through the AER's regulatory activities.

[10] Exhibit 001-007

[11] *Canadian Environmental Assessment Act, 2012*, SC 2012, c 19, s 52 [CEAA 2012].

[12] *Responsible Energy Development Act*, SA 2012, c R-17.3 [REDA].

9. While performing its AER function, the Joint Review Panel or JRP must also have regard to Section 3 of the *Oil Sands Conservation Act*,[13] which requires the AER to, amongst other mandates:

   (a) Effect conservation and prevent waste of the oil sands resources of Alberta,

   (b) To ensure orderly, efficient and economical development in the public interest of the oil sands resources of Alberta, and

   (c) To assist the Government in controlling pollution in the development and production of the oil sands resources of Alberta.

10. The Panel has a broad mandate as the AER. It must consider the interests not only of the applicant and interveners in this specific case, but also the interests of all Albertans who own the resources and have leased the right to, and imposed the obligation on, Teck to recover those resources.

11. The Panel is also required, pursuant to section 20 of the *Responsible Energy Development Act* or REDA, to act in accordance with the Lower Athabasca Regional Plan ("LARP"). Section 20 of the REDA states that, among other things, in carrying out its powers, duties and functions under REDA or any

[13] *Oil Sands Conservation Act*, RSA 2000,, c O-7 [OSCA].

other enactment, the AER shall act in accordance with any applicable Alberta Land Stewardship Act regional plan. Accordingly, in the case of this Frontier application, the Panel is required to act in accordance with the Lower Athabasca Regional Plan or LARP. As set out, you must do this and you have no discretion to do otherwise. The hearing of an individual application is not the appropriate venue to discuss the merits of such a requirement.

12. Sir, while we acknowledge some communities have expressed concerns regarding LARP, and in particular the Surface Water Quantity Management Framework ("SWQMF") for the Lower Athabasca River, the Panel is nevertheless required to act in accordance with LARP as it exists today. The evidence in this proceeding is that approval of the Frontier Project is in accordance with LARP. There is no evidence to the contrary.

13. In determining whether a proposed energy development – in this case the Frontier Project - is in the public interest, the Panel is charged with balancing the proponent's rights in its lease, the public's legitimate expectation to receive value from the resources it owns, the economic benefits of the proposed Project such as jobs, taxes and royalties, and the environmental, social and economic impacts of the project.

14. It is Teck's position that the evidence overwhelmingly demonstrates that the Frontier Project meets the purposes of the legislation, including LARP, and that approving this project is in the public interest.

C. THE JOINT REVIEW PANEL'S ROLE UNDER THE CEAA

15. Turning to the federal regime, under the *Canadian Environmental Assessment Act, 2012* and the Joint Agreement the panel must conduct an environmental assessment of the project by collecting and considering the evidence it considers is necessary to make its recommendations. The Minister's primary task is to consider whether there is likely to be any significant adverse environmental effects caused by this project taking into consideration the mitigations proposed by Teck.[14] It is this Panel's job to assist the Minister in making this determination.

16. The Panel must consider the environmental effects of the project, the likelihood and significance of those effects within temporal and spatial boundaries, public comments, mitigation measures, and the need for the Project.[15] This Panel is also required to consider the potential effects of the

[14] CEAA, 2012 s. 38(2)(a).

[15] CEAA 2012, s. 19(1).

Project on the Outstanding Universal Value or OUV of Wood Buffalo National Park including the Peace Athabasca Delta or PAD.

17. Mr. Chair, as it pertains to determining whether there are likely to be significant adverse environmental effects, we acknowledge that in past decisions from Joint Review Panels for Shell Jackpine Expansion and Total Joslyn Projects, those JRP's determined that harm to any individual of a Species at Risk constitutes a significant adverse effect.

18. With respect, we are of the view that the Panel should revisit this standard in light of information that has emerged throughout these proceedings and in particular in light of how the federal Minister responsible for Parks Canada, Environment and Climate Change Canada and the Canadian Environmental Assessment Agency has made this determination in the course of other assessments.

19. In its submission, the Parks Canada has suggested that there are likely to be significant adverse effects because the potential effects are taking place to a species that is listed under the *Species at Risk*[16] *Act* or SARA and resides in a national park and World Heritage Site. Our view, however, is that the Panel should reject this suggestion because one, there is no legal support for it, and

[16] *Species at Risk Act*, SC 2002, c 29 [SARA].

two, the Government of Canada does not apply this standard to its own activities.

20. As this Panel knows, SARA prohibitions apply within national parks because they are federal lands. Therefore, pursuant to section 32 of SARA no person can kill, harm, harass, capture or take an individual of a wildlife species that is SARA-listed. In addition, it is also prohibited to destroy critical habitat in a national park. SARA listed species and critical habitat can be killed or destroyed within national parks if a permit is issued by the competent minister pursuant to section 73.[17]

21. Pursuant to SARA, the competent minister may only issue that permit if: (1) they are satisfied that all reasonable alternatives have been considered; (2) all feasible measures will be taken to minimize the impact; and, (3) and the activity will not jeopardize the survival or recovery of the species.[18] Therefore, the legislation explicitly allows for the killing of SARA listed species provided that, among other things, the activity will not jeopardize the survival or recovery of the species.

[17] Transcript Vol 16, 3415 line 18 to 3416 line 19.

[18] Transcript Vol 16, 3417, lines 12-24.

22. Mr. Chairman, the standard for significant adverse environmental effects used by Parks Canada in their own environmental assessments is completely unrecognizable compared to the standard they have used to assess previous oilsands projects and the Frontier Project.

23. In Gros Morne National Park, Parks Canada issued itself a permit for the harassing of marten, a SARA listed species, as an activity incidental to the activity of trapping snowshoe hare. The justification was that as residents grow older, trapping will decline, and therefore it was unlikely to threaten the survival or recovery of the species.[19]

24. In Grasslands National Park, Parks Canada issued itself a permit for the moving and killing of sagebrush and native grasses; Critical Habitat for the Greater Sage Grouse, a species that is subject to an Emergency Protection Order under SARA.[20] The justification was that population and distribution objective for the species was not expected to be impacted by the project. The test was not that a SARA listed species or critical habitat was being killed or destroyed – it was that there was no effect on the objective for the species.[21]

[19] Transcript Vol 16, 3421 line 10 to 3411 line 21.

[20] Transcript Vol 16, 3423, line 7-14.

[21] Transcript Vol 16, 3423 line 7 to 3424 line 3.

25. And in Jasper National Park, Parks Canada issued itself a permit for the construction and operation of a 44.7 kilometre transmission line linear disturbance and new substation, resulting in the clearing of 27,000 trees and 74 hectares of critical habitat which was not going to be reforested for the Jasper/Banff population unit of caribou. Parks Canada determined this project would not cause significant adverse environmental effects.[22]

26. Mr. Chairman, the loss of critical habitat and impact on the Jasper/Banff population unit of caribou was not likely – it was certain – and yet Parks Canada determined it would not cause a significant adverse effect. This activity was not 30km away from a national park and World Heritage Site – it was directly inside it.

27. So in every case the Parks Canada Agency has been granted permits by the federal Minister of ECCC because the activity would not threaten the survival or recovery of the species. This is the test in the legislation and it is the test that the Parks Canada Agency and the federal Minister of Environment and Climate Change relies on when deciding to kill SARA listed species and destroy critical habitat. It should therefore be the test this Panel uses as well.

[22] Transcript Vol 16, 3424 line 12 to 3427 line 24.

28. Sir, in your ruling on the production of the Detailed Impact Assessment done for the ATCO Electric Jasper Interconnection Project, you stated:

> "The Panel understands the point that Mr. Ignasiak is making, that a loss of critical habitat within a national park is not considered an adverse – a significant adverse effect and that there seems to be an inconsistency with – between that and Parks Canada's views about the effects of the Project on Wood Buffalo National Park. Clearly, Parks Canada uses different tests under different circumstances…"[23]

29. Mr. Chairman, therefore, we submit that one, the test to be applied when determining significance should take into account whether the activity will jeopardize the survival or recovery of the species. And two, we submit that the Parks Canada Agency's submissions regarding whether Frontier may cause significant adverse environmental effects should be completely disregarded because those submissions are inconsistent with the test the Agency and its Minister regularly applies in other situations.

IV. PROJECT NEED AND PURPOSE

[23] Transcript Vol 16, 3434 lines 4-11.

30. Mr. Chair, I will now turn to addressing the need for and purpose of the Frontier Project. Work on the proposed development commenced in 2008 with the acquisition of oil sands leases, planning, exploratory drilling, establishment of the EIA terms of reference, baseline environmental assessments, and initial public and Aboriginal consultation and involvement. As addressed in Mr. McFadyen's opening statement, the Project was originally applied for in 2011 and consisted of two distinct development areas separated by leases owned by Shell. In 2013, Teck and Shell exchanged leases resulting in a more workable set of leases for both companies and several significant benefits. In particular, the exchange allowed for greater resource recovery than would have occurred with the original proposal, and therefore, greater income and royalties, a smaller footprint having less environmental impact, and fewer boundary issues. An optimized project design was filed in 2015 as a result of the changed leases, along with updated impact assessments.[24]

31. Mr. Chair, Teck has an obligation to the people of Alberta to advance the development of the Project to recover the bitumen resources within those leases in a timely and responsible manner.

[24] Transcript Vol 1, 44 line 1 to 45 line 2.

32. The fact of the matter is that Canada and the rest of the world will continue to demand oil. I put to the panel that, as stated by Mr. McFadyen, it is not in the public interest for Canada to acquire its oil from foreign sources, and allow other jurisdictions to supply oil to meet long-term domestic and global demand.[25] What ***is*** in the public interest is to responsibly develop our own valuable resources here at home. It's not only better for the global environment but also for all Canadians who will economically benefit.

33. Mr. McFadyen articulated the need and three main objectives for Frontier succinctly in his opening statement. First, to maximize the value of a product essential to everyday life; second, generate significant economic benefits and opportunities for Indigenous communities, local communities, for the province and Canada; and third, to responsibly create value for Teck investors.[26]

34. It is Teck's mandate to develop resources and supply energy in a responsible way and as a sustainable developer and responsible member of the communities in which it operates. Mr. Chair, Teck has been doing this for more than one hundred years.

[25] Transcript Vol 1, 113 lines 11-23.

[26] Transcript Vol 1, 46 line 22 to 47 line 9.

35. To illustrate this point, benefits have already in fact begun accruing to the communities in relation to Frontier. As was pointed out by Mr. McFadyen, Teck has already spent about $24 million on contracted goods and services with Indigenous companies in relation to Frontier.[27] This amount will only grow as Teck continues its work on Frontier. As stated by Mr. Crichton of the International Brotherhood of Electrical Workers, Local 424, Teck is, and I quote:

> "a good company, [and] a Canadian company that is prepared to invest billions of dollars in our province at a time when these jobs are desperately needed."[28]

36. Mr. Chair, Teck could not agree more.

A. TECK'S LEGACY

37. I would like to briefly address Teck's qualifications to advance Frontier. Frontier is not only an energy project, it's a mining project. And Teck is a leading mining company that is qualified and up to the task of developing this incredibly valuable world-scale resource for the people of the region, Alberta and Canada. As a leading mining company, Teck has had over 100 years to

[27] Transcript Vol 1, 52, lines 21-23.

[28] Transcript Vol 7, 1403 lines 9-12.

establish and reinforce its commitment to the six values that Mr. McFadyen highlighted in his opening statement. These are commitments to safety, integrity, respect, excellence, courage and sustainability.[29] Teck's commitment to these has led to over 70 separate awards in Canada, the United States and Chile in areas including reclamation excellence, social and environmental performance, environmental policy and management systems.[30]

38. Sir, Teck employs more than 10,000 people worldwide, including over 8,000 employees in western Canada alone. Teck is traded on the Toronto and New York stock exchanges.

39. In addition, Teck owns or has interests in 14 producing operations in North and South America. Of particular significance, is Teck's 21.3 percent ownership in the new Fort Hills oil sands mining facility and a 100 percent ownership interest in the Frontier Project that is the subject of these proceedings.

[29] Transcript, Vol 1, 38, Lines 1-15.

[30] Transcript Vol 1, 40, lines 11-24.

40. Mr. Chair, Teck is no small player in the mining industry. Teck is a global leader and Teck seeks to bring its knowledge and experience to bear on the Frontier Project.

41. Teck has also consistently shown a commitment to innovation. This includes inventing technologies that are now standard in the global mining industry including the use of airborne magnetic surveys, differential froth flotation and even, as we heard, the walkie-talkie. Teck has shown it brings its spirit of innovation to all its endeavours, and oil sands projects are no different. As a founding and very active member of Canada's Oil Sands Innovation Alliance or COSIA, in which an alliance of oil sands producers collaborate to accelerate innovation and environmental performance improvement, Teck has led work on mine reclamation, bison research, fluid tailings treatment and technologies to reduce greenhouse gas emissions.[31] Teck has always strived to innovate, and the technologies Teck will develop and implement throughout the life of Frontier will no doubt have lasting impacts to innovation in the industry as a whole.

42. Teck has more than 100 years of experience operating mines in a safe and environmentally responsible manner. Most importantly, on the rare occasions

[31] Transcript, Vol 1, 42, lines 11-25.

where operations do not meet its high standards of performance, Teck has consistently shown that it is committed to doing the right thing by being open, transparent and remaining responsible. Teck does not walk away from issues or challenges and is committed for the long term.

V. ENVIRONMENTAL ASSESSMENT

43. Mr. Chair, I think it's important to also put the application and its Environmental Impact Assessment or EIA into proper context before I review the issues including public consultation. The Wood Buffalo region is one of the most intensely studied and monitored regions in Canada. The environment in the region and the potential impacts of oil sands development are well understood. The environmental assessment process for this Project was rigorous, comprehensive, transparent and complete and is the culmination of over ten years of work. This includes:

(a) in accordance with the Canada Alberta Agreement on environmental assessment the draft terms of reference were provided for stakeholder and regulator input, including input from Environment Canada, Health Canada and Fisheries and Oceans Canada;

(b) the EIA was developed with input from stakeholders and Indigenous communities through an intensive consultation process, including extensive consideration of Traditional Knowledge;

(c) Supplementary information addressed more than 5 rounds of information requests and over 1200 separate inquiries prior to provincial completeness;

(d) Responses to 12 packages of information requests from this Joint Review Panel, and an updated OUV Assessment were provided to this Panel for its consideration;

(e) Extensive reviews of Teck's assessment were conducted by various stakeholders with especially robust and collaborative reviews undertaken by Indigenous communities, again resulting in 14 agreements addressing Indigenous concerns.

44. The stated purpose of the EIA was, amongst other things, to:

i. Assess the project-specific and cumulative effects of the Project;

ii. Fulfill regulatory requirements of both the provincial and federal governments; and

iii. Assist regulators, public stakeholders and potentially affected Indigenous communities in understanding the environmental consequence of the Project's construction, operation, decommissioning and reclamation.

45. On May 31, 2018, the JRP determined that Teck's application record, including its EIA, was complete.[32]

46. In particular, you have heard that the EIA is conservative, that means the approach taken by Teck in their EIA was both comprehensive and appropriate to fully assess potential effects of the Project. This approach reduces uncertainty and increases confidence in the predictions.

47. I would also like to reiterate Mr. Speller's comments explaining how important it is to properly characterize the findings of the EIA, and I quote:

> Not every predicted change causes a significant effect or an adverse risk. So in many cases we predict a change, but that change is small and may not actually be perceptible. We have tried to put our predictions in a proper assessment context so reviewers can understand our perspective on which predicted changes matter and which ones are considered negligible.[33]

48. The importance of contextualizing the predicted changes was also highlighted by Mr. Speller who further stated that, quote:

[32] CEAA Doc 396.

[33] Transcript Vol 1, 87, lines 15-21.

> Without situating these findings and relevant thresholds or guidelines or ecological context, it inflates the effects of the project, in our view, exaggerates in the layperson's mind what the project's actual effects will be.[34]

49. Teck's view is that it is important to look at the changes predicted to occur due to the Project and from cumulative development – this is reflected in Teck's EIA methodology. However, it is important to reiterate Mr. Speller's comments that a predicted change does not necessarily mean a predicted adverse effect – context is key.

50. Teck is committed to verifying the predictions in the EIA and monitoring for, and adaptively managing, any unforeseen effects of its Project. The Panel has heard evidence that Frontier has detailed mitigation, monitoring and adaptive management plans and programs for the social, water, air and terrestrial components of the Project. Teck takes its commitment to monitoring and adaptive management very seriously and has demonstrated this commitment throughout its operations. Teck also has bilateral commitments with Indigenous partners to support these robust actions, and is supportive of the

[34] Transcript Vol 1, 87, lines 4-8.

Federal government's proposal for a joint oversight committee which will support best practices in this regard.

51. Mr. Chairman, before turning to Indigenous consultation, I'd like to address Parks Canada's Strategic Environmental Assessment or ("SEA") conducted for the Wood Buffalo National Park.[35]

52. Teck fully respects the important ecological and cultural significance of the Park.[36] Teck is of the view that the SEA recommendations are generally sound[37] and reflect the concerted and collaborative efforts of Parks Canada, industry representatives, and other Indigenous communities.

53. The SEA is undoubtedly important. It is a valuable tool to be used by Parks Canada for advancing its discussion with stakeholders and Indigenous communities in the development of a Park Action Plan. However, the Panel should recognize that the SEA is a document that is designed to collect each and every concern of a number of Indigenous communities. Where there were alternate views on topics, the SEA presents both views.[38]

[35] CEAA Doc 401.

[36] Transcript Vol. 1, 58, lines 19-21.

[37] Transcript Vol 1, 531, lines 19-20.

[38] CEAA Doc 401 at PDF 5.

54. The SEA states:

> SEA is a separate type of environmental assessment, different from the environmental impact assessments that examine the effects of a single proposed project. Project-level assessments are more common and have an established methodology, while SEA practice has been more flexible (Noble & Storey, 2001; Noble, 2009). The focus of a project assessment is outward from the proposed activities that may impact the environment (i.e., looking "downstream" to the environment), but the focus of this SEA is outward from the environment, based on observed changes in environmental conditions (including looking "upstream" and to broader influencers of change). [39]

55. Mr. Chair, there are a number of fundamental differences between the work that Teck completed for the Frontier EIA and the work that has been conducted for the SEA of the Park.

[39] CEAA Doc 401 at PDF 32.

56. First, the SEA represents a synthesis of information from a number of different sources, which is appropriate and typical for an SEA.[40] Second, the SEA did not rely on any new analysis completed by the authors.[41] Third, Mr. Chair, the Parks Canada SEA did not use any information provided by Teck in the Project EIA, aside from minor use of the Peace River flow data.[42]

57. Mr. Chairman, Parks Canada provides specific rationale for why they did not rely on Teck's Project-specific EIA information and explains the difference between a SEA and Project-specific EIA.[43] Teck wishes to further highlight that the SEA examined trends and these trends, Mr. Chairman, do not equate to Project-specific effects.[44]

58. Teck's EIA examined the changes and trends identified by Parks Canada based on the information available to Teck and through the lens of a Project-specific effects analysis or Project-specific risk assessment appropriate for an environmental impact assessment. Teck submits that this gives a better level of detail as to whether there's a Project-related effect.[45]

[40] Transcript Vol 3, 544, lines 8-15.

[41] Transcript Vol 3, 544, lines 16-20.

[42] Transcript Vol 3, 544, line 21 to 545, line 3; see CEAA Doc 401 at PDF 111.

[43] Transcript Vol 3, 545, lines 4-9.

[44] Transcript Vol 3, 545 line 20 to 546 line 8.

[45] Transcript Vol 3, 546, lines 9-16.

59. Finally, Mr. Chair, one of the recommendations of the SEA was to, and I quote:

> Refer projects under the Canadian Environmental Assessment Act, 2012 (or subsequent legislation) and Mackenzie Valley Resource Management Act for environmental assessment when they might have significant adverse environmental effects on the World Heritage Values of WBNP world heritage site and evaluate those potential impacts as part of the assessment.[46]

60. Sir, Teck conducted this recommended assessment. Teck was the first proposed oilsands development to do so and Teck's assessment concluded that the potential effects of Frontier on the Outstanding Universal Value of the Park would be negligible and would not impact the integrity of the Park.[47]

A. Aboriginal and Treaty Rights

61. I would now like to briefly discuss the preliminary assessment on the potential impact of the Project on Aboriginal and Treaty Rights that was filed by the

[46] CEAA Doc 401 at PDF 221.

[47] Transcript Vol 1, 58, line 19 to 59 line 2.

Government of Canada.[48] Mr. Chairman, the Rights Impact Assessment is novel, useful and demonstrates the need for accommodation and further government action. Teck has done its part in addressing potential effects on Indigenous rights and in support of further action from the Crown.

62. Mr. Chair, the Rights Impact Assessment focused on potential impacts on rights, but it was not an assessment of specific environmental effects. Teck is of the view that this Rights Impact Assessment should not be substituted for Project-specific environmental assessment. Rather, Mr. Chair, Teck is of the view that, as stated within the Rights Impact Assessment:

> This methodology will be used by the MCFN and the Federal Government when considering Project impacts on the exercise of the rights of the MCFN, and in considering whether consultation on the Project was adequate.[49]

B. Outstanding Universal Value of Wood Buffalo National Park

63. Mr. Chairman, it's important that I take some time to speak to Wood Buffalo National Park and its Outstanding Universal Value as this relates to the Frontier Project.

[48] CEAA Doc 394.

[49] CEAA Doc 394 at PDF 3.

64. As a result of the UNESCO Monitoring Mission in relation to Wood Buffalo National Park, the Project's potential effects on the OUV of the Park and the PAD was a specific information request of the Panel and an issue in this hearing.

65. Teck fully respects the ecological and cultural significance of the Park and has stated such many times in this proceeding. In fact, Teck's environmental assessment included a comprehensive review specifically of potential impacts to the Park. Mr. Chair, as I mentioned, Teck is the first company to have ever done this.

66. It's worth restating that Teck's assessment concluded that the potential effects of Frontier on the OUV of the Park would be negligible and would not impact the integrity of the Park.

67. Mr. Chair, it is important to provide context. In addition to Teck's findings, Parks Canada has previously expressed that the Park is neither endangered and its ecological integrity is not threated. Sir, in a letter to UNESCO dated December 11, 2014, Parks Canada states:

> Canada's perspective on the current state of conservation of Wood Buffalo is echoed by a recent report on the park released by the International Union for the Conservation

> of Nature (IUCN) in November 2014. As part of its independent assessment of the 'conservation outlook' of all natural World Heritage Sites around the world, IUCN examined the conservation outlook for Wood Buffalo and concluded 'in general, the site's conservation values are sound and, in fact, improving with respect to overall boreal forest ecology and bison and whooping crane populations'. It further concluded that Wood Buffalo's overall conservation outlook is 'good with some concerns.' The 'concerns' raised in IUCN's assessment relate to impacts on the Peace-Athabasca Delta from dam-caused hydrological alteration, upstream industrial. development and climate change, effectively the same issues raised by the petitioners. That being said, IUCN did not conclude that Wood Buffalo is facing a critical situation."[50]

68. Mr. Chair, in addition to Parks Canada's previous views, according to their document titled "Ecological Integrity of National Parks" and Parks Canada's most recent assessment, Wood Buffalo National Park has exhibited ecosystem

[50] Transcript Vol 16, 3401 line 24 to page 3403 line 6.

ratings that are good and stable to fair and stable.[51] In addition, no declining trends were identified for Wood Buffalo National Park, although declining trends were identified for other national parks that are also World Heritage Sites. In addition, and consistent with this, Ms. Cummings of Parks Canada confirmed that it remains Parks Canada's position that Wood Buffalo National Park should not be put on the list of sites endangered.[52]

69. Sir, as previously mentioned, Teck is fully supportive of the MCFN led initiative to create a Biodiversity Stewardship Area, sometimes referred to by MCFN as a Conservation Stewardship Area, at the Park's southern boundary – ensuring a buffer is established.

70. Teck does not take its responsibilities lightly and this includes its joint responsibilities with community partners. Teck remains committed to promoting the protection and preservation of the OUV of the WBNP and looks forward to continuing this work going forward.

71. It is also worth noting that Teck is committed to supporting the establishment of a biodiversity stewardship area or BSA. This is reflected in the work Teck has done with MCFN and Teck's voluntary relinquishment of their Twin

[51] Transcript Vol 16, 3409 line 22 to 3410 line 2.

[52] Transcript Vol 16, 3404, lines 7-17.

Lakes leases. If realized, the BSA would offer further protection to Wood Buffalo National Park by restricting development immediately south of the park boundary.

72. To be clear, the BSA is not viewed by Teck as necessary to mitigate Project-specific effects over and above what Teck has already included in their assessment. However, if the BSA were in place, it would benefit wildlife, such as bison and caribou, and migratory birds.[53]

VI. CONSULTATION

73. Mr. Chair, I'd now like to speak to the extensive consultation that Teck has undertaken with those Indigenous communities closely connected to the Project.

74. This engagement is crucial for Teck in keeping with its values and building upon its of its commitment to forging strong relationships in the areas where Teck works.

75. Teck has set out its global commitments in its Indigenous Peoples Policy which, in addition to meeting the consultation requirements of Alberta and Canada, commits Teck to the following:

[53] Transcript Vol 5, 1085 line 5 to 1086 line 2.

(a) Building respectful relationships;

(b) Engaging in early, meaningful dialogue;

(c) Integrating Indigenous peoples' perspectives and traditional knowledge into decision-making;

(d) Identifying ways to support Indigenous groups in achieving self-defined community goals; and,

(e) Working to achieve the free, prior and informed consent of Indigenous communities.

76. Mr. Chair, we submit that throughout this hearing Teck has shown how it has sought to achieve these goals. This is best evidenced by the 14 out of 14 agreements Teck has reached with Indigenous communities most affected by the Project. In addition, it is evidenced specifically by the well over 350 meetings with Indigenous community representatives, 40 mitigation planning workshops, 20 Project site tours and flyovers, and 35 detailed written technical reviews and submissions with those communities closely connected to the Project. To help facilitate this work, Teck has provided about $10 million in capacity funding to Indigenous communities.

77. Through rigorous consultation, Teck and its community partners have had extensive and meaningful dialogue that has provided valuable feedback to

Teck and resulted in a number of important changes to the Project to address community concerns.

78. Sir, this includes:

(a) Identifying fish offsetting options beyond enlargement of the fish habitat compensation lake;[54]

(b) Clarifying and strengthening our commitment to not place tailings in pit lakes or over areas prior to being mined;[55]

(c) Emphasizing wetlands and bison habitat in the closure landscape;[56]

(d) Placing the Reclamation Material Stockpiles east of External Tailings Area One and over backfilled in-pit locations to reduce the size of the Project Disturbance Area;[57] and,

(e) Changing Teck's *Water Act* application to not include the potential use of water from tributaries of the Athabasca.[58]

[54] CEAA Doc 163, Project Update, Vol. 1, Section 2.1.8, Conceptual Fisheries Offsetting Plan at 2-9.

[55] CEAA Doc 163, Project Update, Vol. 1, Section 6.1.3, Tailings Placement Strategy at 6-4 to 6-6.

[56] CEAA Doc 163, Project Update, Vol. 1, Table 2.3-1.

[57] CEAA Doc 163, Project Update, Vol. 1, Section 2.2.4.

[58] CEAA Doc 186, Teck Response to SIR No. 31 at PDF 154-158.

79. In addition, Teck is committed to contracting and hiring practices that focus on qualified, local Indigenous businesses, and Teck requires its contractors to do the same. As mentioned previously, Mr. Chair, to date Teck has spent about $24 million on contracted goods and services with Indigenous companies.[59]

80. Indeed, Teck is committed to meaningful consultation and engagement for the life of the Project.

81. Through its engagement, Teck has been fortunate in coming to formalized agreements with a number of communities. These agreements create the framework for ongoing cooperation and collaboration, for environmental stewardship, economic benefits, and dispute resolution.

82. Mr. Chair, Teck identified 14 Indigenous communities, First Nation and Metis, that are most affected by the Project through proximity to traditional territory, land use areas, or other potential effects.

83. As was indicated at the beginning of this hearing, Teck is proud to now have agreements with all 14 of these Indigenous communities. This is evidenced by Teck's efforts to do everything within its control to address Indigenous

[59] Transcript Vol 1, 52 lines 22-24.

communities' concerns and, indeed, if this Project is approved and proceeds, Indigenous communities will receive substantial benefits.

84. Teck acknowledges that some communities have appeared at this hearing with whom Teck does not have a formalized agreement. These communities are Katl'odeeche First Nation, Deninu Kue First Nation, Fond du Lac First Nation, the Northwest Territory Metis Nation and Smith's Landing First Nation. These communities have expressed concerns about the Project's potential effects on the OUV of Wood Buffalo National Park and the PAD. Teck recognizes that these areas are important to these communities.

85. However, Mr. Chairman, as Mr. Speller explained in direct examination at the start of these proceedings, the Frontier Project will have a negligible or imperceptible effect on the Park, including the PAD. These communities' traditional use of the Park and the PAD will not in any way be affected by the Frontier Project.

86. Mr. Chairman, Teck wishes to reiterate that all five of these communities were provided with notice of the Project approximately 10 years ago and none of them raised any substantive concerns regarding the Project until recently, after they were notified by the Government of Canada that a Strategic Environmental Assessment of the Park was being carried out. Our understanding is that Canada has consulted with these five communities

separately and outside the Frontier regulatory review process with respect to the initiatives being undertaken in connection with Wood Buffalo National Park and the PAD.

87. In addition, Mr. Chair, it is important to note that the Alberta Aboriginal Consultation Office or the ACO determined that consultation was either not required with Kátł'odeeche First Nation, Deninu Kue First Nation and Smith's Landing First Nation or, if it was, it was adequate.[60]

88. Therefore, because these four communities will not be affected by the Project, Teck is not proposing to enter into agreements with them. Teck is, however, committed to sharing information regarding the Project, including potential employment and contracting opportunities.

VII. GENERAL ISSUES

89. Mr. Chairman, I would like to deal with a number of general issues first. These are issues about which there appeared to be some confusion and I want the panel to be absolutely clear on Teck's view.

90. Teck would like to clarify the value of its draft mitigation, monitoring and management plans and their intents and purposes. Teck would like to

[60] CEAA Docs 674, 676, and 677.

highlight that the number of the draft plans, and detail contained within them, that Teck submitted as part of its application is unprecedented. Additionally, Mr. Chair, the final versions of these plans will rely on the JRP Report, the Decision Statement, future stages of Project planning and feedback from Indigenous communities and stakeholders, who have already provided invaluable feedback in shaping the draft plans. Moreover, Teck has agreed to conditions as part of its approvals that identify finalization of those plans in advance of construction of the Project. The level of commitment to these draft plans at this stage of the process should be viewed as very meaningful, and a testament to Teck's commitment to being open, transparent and not only a good neighbour, but a good partner.

91. Teck would also like to clarify its position with regards to the Original Fort McMurray First Nation Direct Evidence. Prior to OFMFN's witness panel giving its evidence, counsel for OFMFN provided lengthy submissions, the majority of which was evidentiary in nature.[61] It is Teck's position that it was improper for Ms. Gladieu-Quinn to have provided evidence in this manner due to the fact that she was counsel and that the evidence she put forth was

[61] Transcript Vol 14, 2764 line 11 to 2776 line 25,

not subject to test through cross-examination. Therefore, this information should be given no weight by the Panel.

92. The following matters relate to the Trappers' Direct Evidence. During the Trappers' submissions. Mr. McCargar read into the record two emails written by Mr. Pete Hoffman who was not present at the hearing.[62] As Teck was unable to test this evidence, we submit that these two emails should be weighted accordingly.

93. Additionally, we note that Mr. McCargar's stated recommendations at the close of the Trappers' direct evidence[63] did not constitute evidence provided by the witness panel, and should therefore similarly be afforded little or no weight.

94. And lastly on the Trappers, Teck submits that the Trappers' evidence should be given less weight for a few reasons. First, the evidence shows that the Trappers were aware of the Frontier Project and Teck's activities for a long time, and yet had not expressed any concerns to Teck directly until the first day of the hearing. Second, they confirmed that neither RFMA 2346 and 2932

[62] Transcript Vol 14, 2885 line 16 to 2888 line 25.

[63] Transcript Vol 14, 2940 line 9 to 2949 line 10.

actually overlap with the Project disturbance area.[64] In fact, the RFMA trapline 2346 is 7.6 km away from the Project site, and RFMA 2932 is 9.1 km away.[65] Finally, Mr. Chair, with respect to any traplines that do overlap with the Project disturbance area, Teck has committed to providing appropriate compensation at the appropriate time. Nonetheless, we will specifically address some of the points that the Trappers have made in the course of this argument.

~~95.~~ Finally, in the Council of Canadian's submissions, Ms. Bronwen Tucker stated that there was "a reluctance on the part of Teck to go to Fort Chipewyan and speak to a wider range of members of these communities." This is an entirely false statement and it should be rectified for the Panel since, in fact, Mr. Chair, Teck representatives are in Fort Chipewyan on a regular basis as evidenced by our extensive consultation record with communities. In support of her statement, Ms. Tucker references the letter filed by Teck on June 29, 2018 which was CEAA Document 438. Contrary to Ms. Tucker's assertion that Teck was reluctant to go to Fort Chipewyan, Teck stated explicitly that it did not object to a portion of the hearing being held in Fort Chipewyan.[66] The

[64] Transcript Vol 14, 2950 line 21 to 2951 line 2.

[65] Transcript Vol 14, 2962 line 25 to 2963 line 5.

[66] CEAA Doc 438 at 4.

fact is that Teck has always been supportive of a portion of the hearing being held in Fort Chip, provided that certain logistical issues could be successfully addressed. Teck is pleased that the logistical issues were successfully dealt with and that in fact that they were able to assist so that a portion of the hearing was successfully held in Fort Chipewyan for the first time in Canadian oil sands history.

A. PROJECT VIABILITY AND ECONOMICS

96. Mr. Chairman, changing topics, one issue that has received a significant deal of attention is Teck's Socio-Economic Impact Assessment or SEIA of the Project. This issue was raised in various forms by the Oil Sands Environmental Coalition or OSEC, Stand.Earth and Keepers of the Athabasca.

97. It is important to note that Teck completed a robust socio-economic impact assessment consistent with the methodology employed in the evaluation of all previous oil sands applications in Alberta. As stated by Mr. Shewchuk, the socio-economic impact assessment involved a comprehensive examination of the social and economic impacts of the Project on affected local communities, the province and Canada.

98. First, I will address the points raised by OSEC, then Stand.Earth, and then Keepers of the Athabasca.

99. OSEC raised five points regarding project economics: the effect of discount rates between WCS and WTI, future predictions regarding the price of oil, economic implications for the project relating to the current state of pipeline development in Canada, the application of a cost-benefit analysis, and Teck's ability to comply with the Carbon Competitiveness Incentive Regulation.

100. With regards to concerns with the competitiveness of WCS when compared to WTI on the international market, the price of oil and the status of pipeline proposals, our view is that these are not issues that are relevant to this Panel's deliberations. However, it is in any event worth noting that there are currently several proposed pipelines being pursued and that oil demand, under most scenarios, is expected to increase in the foreseeable future. Of course, these are issues that Teck's Board of Directors will need to assess as part of Teck's long term view before determining whether to sanction the Frontier Project. Again, these are not issues relevant to the Panel's deliberations on this Project.

101. Mr. Chairman, Dr. Joseph submitted that:

> "Teck's assessment of the project's economic benefits is inaccurate and misrepresentative"[67] and expressed the opinion that "the project would be a bad choice both for society and private investors."[68]

102. Dr. Joseph based this submission on his review and critique of Teck's Socio-Economic Impact Assessment or ("SEIA") and the results of his cost-benefit analysis.[69]

103. Mr. Chairman, in responding to Dr. Joseph's critique of Teck's SEIA, we remind you that the assessment conducted by Teck is consistent with the assessment methodology employed in the evaluation of all previous oil sands applications in Alberta.[70]

104. The SEIA employed by Teck is a comprehensive examination of the social and economic impacts of the Project on affected local communities and the province overall. It also contains the detail necessary to understand the magnitude of Project effects and how these effects will manifest over time.[71]

---

[67] Transcript Vol 15, 2989, lines 3-5.

[68] Transcript Vol 15, 2992, lines 17-19.

[69] Transcript Vol 15, 2988, lines 18-22.

[70] Transcript Vol 1, 95, lines 4-8.

[71] Transcript Vol 1, 95, lines 9-14.

105. Mr. Chairman, as demonstrated under cross-examination, the Cost-Benefit Analysis or ("CBA") submitted by OSEC is extremely sensitive to the underlying assumptions of the author.

106. The sensitivity of Dr. Joseph's CBA is evident in the changed outcomes seen within his revised report. Dr. Joseph adjusted the exchange rate used from 0.837 to 0.86. This 0.023 difference resulted in Dr. Joseph's model increasing the Net Present Value of the Project by $0.6 billion and increased the internal rate of return by 0.3 percent.[72] Mr. Chair, this change is not immaterial. It is significant. And I ask the Panel to take a moment of pause, to reflect upon the significance that 0.023 can make upon this kind of analysis.

107. With regards to the Cost-Benefit Analysis conducted by Dr. Joseph, Teck invites the panel to conclude that a CBA is not an appropriate tool to assess the impacts and benefits of this project. As was stated by Mr. Shewchuk, and I quote:

> The cost-benefit submitted by OSEC is extremely sensitive to the underlying assumptions of the author. We are of the view that the study does not adhere to best practices for cost-benefit analysis, and note that a minor

[72] Transcript Vol 15, 2996 line 23 to 2997 line 11..

> adjustment to a single key assumption can completely reverse the outcome of the analysis. For example, a reduction of approximately 2.5% in the discount rate used for project benefits results in a positive net present value.[73]

108. Therefore, the CBA cannot be relied upon and the Panel should instead rely, as Teck has done, on industry best practices to conduct an economic impact assessment in conjunction with an environmental impact assessment, in order to determine the Project's merits. Mr. Chairman, it is quite simple really, Teck's Economic Impact Assessment approach is that which is accepted by regulators.

109. In addition and as noted by Dr. Kits of Keepers of the Athabasca:

> one of the limitations of cost-benefit analysis is that it cannot include costs that are subject to uncertainty. We need to know the probability of a negative event occurring in order to include it in a cost-benefit analysis.[74]

110. Teck submits, and as was acknowledged by Dr. Joseph, that

[73] Transcript Vol 1, 95 line 15 to 96 line 1.

[74] Transcript Vol 9, lines 20-24.

> choosing a discount rate has been one of the most contentious and controversial aspects of the cost-benefit analysis of regulatory policies.[75]

111. Mr. Chairman, not only is Dr. Joseph's CBA extremely sensitive; it has not adequately accounted for certain market impacts.

112. For example, Dr. Joseph indicated in his direct evidence that he "would expect Aboriginal groups to fare poorly with this project unless an impact benefit agreement is signed […] I haven't been following the details of impact benefit agreements, but I do believe I saw something may have been signed"[76] and again later said "Yeah, I read an article which suggested something had been signed with one of the groups".[77]

113. Dr. Joseph had originally provided his expert report on August 22, 2018. It was then revised on October 20, 2018.

114. Teck notes that it had a large number of Participation Agreements in place even before August 22, 2018 that were noted on the record. In addition, in between August 22 and October 20, agreements were reached with ACFN and

[75] Transcript Vol 15, 3003 line 15 to 3004 line 3.

[76] Transcript Vol 15, 2991, lines 17-23.

[77] Transcript Vol 15, 2998, lines 2-4.

MCFN – a fact that was well publicized in the media and discussed during these proceedings.

115. When asked if his revised report included this updated information, Dr. Joseph stated, and I quote:

> I mean, that's fair to point out that I could have adjusted that section where I discuss potential impacts on Aboriginal groups, so thank you.[78]

Mr. Chairman, Dr. Joseph did not account for these agreements.

116. Teck submits that Dr. Joseph's characterization and knowledge of the potential benefits to Indigenous communities in these proceedings is perfunctory at best.

117. Mr. Chairman, in addition, Teck submits that Dr. Joseph adjusted the discount rates in his CBA to come to the conclusion that this Project would not provide a net benefit.

118. Dr. Joseph's use of a dual or differential discount is not only out of line with standard practice, and national and international guidance, it is also out line with how he has historically conducted his CBAs for other major resource

[78] Transcript Vol 15, 2998, lines 21-24.

projects, including the Kearl Oil Sands Mine and the Trans Mountain Expansion Project.[79]

119. Dr. Joseph indicated in his evidence that the Treasury Board of Canada Secretariat Guidelines on CBA is outdated[80] and that practice evolves.[81]

120. However, Dr. Joseph later admitted that a Policy statement issued by the Treasury Board of Canada Secretariat, dated September 1, 2018, and which was intended to support the Treasury Board Guidelines, would suggest the Guidelines are still relevant, to be followed, and that no updates had been made.[82]

121. In addition, Dr. Joseph strayed from guidelines and standard practice further by applying a 10% discount to market impacts rather than the 8%, uniformly applied, as recommended in the TBCS Guidelines.

122. Mr. Chairman, Dr. Joseph acknowledged that ***if he had not*** used this dual discount approach the Frontier Project would have a positive net present value.[83]

---

[79] Transcript Vol 15, 3004 line 5 to 3006 line 9; Transcript Vol 15, 3019 line 17 to 3020 line 23.

[80] Transcript Vol 15, 2993, lines 19-22.

[81] Transcript Vol 15, 3020, line 25.

[82] Transcript Vol 15, 3009, lines 1-21.

[83] Transcript Vol 15, 3026, lines 15-23.

123. Teck submits that, as evidenced by Teck's EIA and the uniform discount rate sensitivity analysis of Dr. Joseph's report, that the Frontier Project will have a positive net present value.

124. Turning now to Stand.Earth's submissions, Stand.Earth raised concerns regarding Teck's ability to financially support Frontier, especially in light of certain risks to the price of oil in future years. In support of its submissions, Stand.Earth adduced a report and provided evidence through Mr. Tom Sanzillo of the Institute for Energy Economics and Financial Analysis.

125. We submit however that Mr. Sanzillo's report should be completely disregarded for two reasons. First, the evidence provided by Mr. Sanzillo is biased and not objective. And second, Mr. Sanzillo cannot be relied upon as an expert to speak to the matters on which he purported to opine.

126. First, Mr. Sanzillo and his report cannot be relied upon as they present a biased view of Frontier and Teck. Mr. Sanzillo's evidence intends to push the advocacy agenda of the IEEFA and Oil Change International. It was established in Teck's examination of Mr. Sanzillo's evidence that the stated mandate of the IEEFA, the group which Mr. Sanzillo co-founded and through which the report was published, is to "curtail the use of fossil fuels in the

energy sector."[84] Additionally, the 2015 model upon which Mr. Sanzillo relied was lifted from the Oil Change International Report whose stated mandate is to "be an advocacy organization focused on exposing the true cost of fossil fuels and facilitating the coming transition towards clean energy." Finally, the author of the Oil Change International Report has been involved with organizations such as Greenpeace UK. All these factors together, illuminate a picture of bias upon bias upon bias being presented to the panel as independent and objective facts. This is simply not true.

127. Second, Mr. Sanzillo's assertion that he is an expert qualified to speak on the matters in his report is patently false. First, while Mr. Sanzillo in his direct evidence stated that he had run an updated 2018 model in August,[85] he conceded during cross examination that he had not in actuality run a new 2018 model,[86] indicating that the evidence he currently presents to the Panel is out of date.

128. Second, Mr. Sanzillo cited the International Maritime Organization's establishment of new sulphur standards as a source of significant risk to the

[84] Transcript Vol 9, 1734, lines 2-14.

[85] Transcript Vol 9, 1720, lines 11-13.

[86] Transcript Vol 9, 1737, lines 17-21.

cost of oil on the international market.[87] However, when pressed on the issue, it was clear that Mr. Sanzillo was entirely unaware of the actual workings of the IMO regulations. For instance, when asked whether the only way to comply with the IMO regulations is for ships to switch to low sulphur fuel, Mr. Sanzillo responded that he had "no idea"[88] and that "he was not an expert in the micro workings of the regulatory implementation of this intervention."[89] Ultimately, he conceded that there "an abundant number of ways" to comply with the new IMO regulations, which did not involve changing the consumption of the types of oils currently used.[90] It is shocking he is giving such unreliable evidence given that he could have spent 10 minutes on the IMO website and educated himself about these matters.

129. Finally, while Mr. Sanzillo bases his opinion on Teck's market capitalization, when asked for basic information regarding Teck's stock price, market cap and shares outstanding, Mr. Sanzillo was unable to provide an accurate estimate of Teck's market capitalization, and was entirely unable to provide the panel with information regarding Teck's shares. Additionally, while Mr. Sanzillo had predicted similar economic weaknesses in Teck's contribution to

[87] Transcript Vol 9, 1723, lines 13-20.

[88] Transcript Vol 9, 1749 line 24.

[89] Transcript Vol 9, 1749, lines 16-18

[90] Transcript Vol 9, 1755, lines 3-4.

Fort Hills, he conceded that contrary to his opinion provided in a 2015 report, Teck not only met the outlays required of them on Fort Hills, but increased its ownership share, all while managing to increase Teck's share value significantly.

130. Therefore, the biased and completely uninformed position put forth by Mr. Sanzillo and Stand.Earth should not be given any weight by this Panel, and Stand.Earth's submissions should be disregarded in their entirety. To call Mr. Sanzillo an expert is to render the word expert meaningless.

131. Finally, I turn to the submissions made by Mr. Regan Boychuk on behalf of Keepers of the Athabasca. Mr. Boychuk's report and testimony focused on Teck's environmental liability accounting practices. Mr. Boychuk's evidence should not be considered persuasive by the Panel because of his significant lack of authority to qualify as an expert on the matter, and because his assessment of Teck's accounting practices is both irrelevant and incorrect.

132. It should be noted that Mr. Boychuk's report and testimony opines on topics ranging from accounting practices, to legal analysis of both Canadian and American jurisprudence,[91] and domestic, American and international financial regimes. Mr. Boychuk however has no qualifications to lead the Panel to

[91] Transcript Vol 9, 1908 – 1909.

conclude he has expertise in any one of these fields, let alone all of them. If we look at Mr. Boychuk's CV filed as CEAA Doc 496, we see that he has no accounting designation, no law degree, and no financial background. His formal education consists only on matters relating to Political Science, and he has had no work experience to supplement the significant dearth of formal education he has on any of these matters. Moreover, when asked whether his paper, "Alberta over a Barrel Environmental Liabilities and Royalties in the Oil Sands" was peer-reviewed, Mr. Boychuk confirmed that it was not peer-reviewed, nor was it submitted to an academic journal, and rather relied on the fact that "a number of his expert friends" had reviewed it.[92] Mr. Boychuk is not an expert and his lack of qualifications mean that his report should be given no weight.

133. Mr. Chairman, Mr. Boychuk submitted that Teck "manipulates accounting estimates to suit the financial needs of the moment."[93]

134. Respectfully, Mr. Chairman, Mr. Boychuk is an independent researcher with a background in social sciences – and that is all.

135. He is not a certified professional accountant. Mr. Boychuk has never been employed by a third-party financial statement auditing firm nor has he ever

[92] Transcript Vol 9, 1976, lines 10-23.

[93] Transcript Vol 9, 1899, lines 13-15..

been retained by a publicly traded company to conduct financial analysis or auditing.[94]

136. Mr. Boychuk's report is largely a critique of national and international reporting standards for environmental liabilities. It is broad in scope and fails to substantively address the Frontier Project in a meaningful way – relying largely on speculation and fear-mongering over contingent liabilities.

137. Mr. Chairman, Teck is required to comply with the International Financial Reporting Standards or ("IFRS"). Teck's financial statements undergo internal review, review by its Board of Directors, and review by independent third-party auditors Pricewaterhouse Coopers. Teck submits that this is perfectly sufficient evidence to show that Teck does not "manipulate accounting estimates to suit the financial needs of the time."

138. Mr. Chairman, Teck has shown that it operates with integrity and honesty in all its operations.

139. As evidenced by the Economic Impact Analysis ("Econ IA"), the uniform discounted CBAs we've seen, and Teck's reporting requirements, this Project will provide a significant net benefit to the region, the province, and the country, and will do so in a transparent manner.

[94] Transcript Vol 9, 1980, lines 6-23.

140. Simply put, Mr. Chairman, Mr. Boychuk's criticisms of Teck's accounting practices are irrelevant. As was stated by Mr. McFadyen in Teck's direct examination,

> As a Canadian public company, [Teck is] required to follow international financial reporting standards for financial reporting purposes. As with all public companies, [Teck's] financial statements are audited by independent auditors, and in [Teck's] case, Pricewaterhouse Coopers. Any estimates or judgment made by Teck as part of its financial statements is audited and it is confirmed that these are reasonable and applied on a consistent basis. Any new estimates or judgment or change in methodology are assessed and scrutinized by Teck Management, Teck's Audit Committee and PwC. This applies to reporting and disclosure around reclamation liabilities, including discount rates and other inputs.[95]

[95] Transcript Vol 1, 103, lines 2-18.

141. In short and respectfully, Mr. Chair, it is not the place of this Panel to assess Teck's accounting practices, and even if it were, Teck's accounting practices are audited annually and in compliance with best accounting practice as determined by third-party registered and chartered accountants, in contrast to Mr. Boychuk's layperson's view.

142. Mr. Chair, OSEC also raised the point of Teck's ability to comply with the Carbon Competitiveness Incentive Regulation. Teck does not agree with the analysis conducted by OSEC and doesn't view the assumptions used in their analysis as realistic. Teck's design GHG emissions estimate for the Project was calculated on a conservative basis, which is appropriate for the environmental impact assessment for the project. However, OSEC used this conservative design estimate of the GHG emissions and for its cost of carbon analysis for the Project, OSEC assumes that there wouldn't be any emissions improvements or reductions whatsoever for the 41-year operating life of the project. Sir, this is not a realistic assumption based on the well documented actions being taken within COSIA to accelerate environmental performance improvements, including reductions in GHG emissions.

143. Mr. Chairman, we also note that OSEC assumed that the output-based allocation will continue to become more stringent every year for the next 50 years. However, it is important to recognize that other oil-producing

jurisdictions have been slow to implement carbon legislation. Canada and Alberta recognize that the practical need to maintain the competitiveness of Canada's trade-exposed sectors to prevent carbon leakage to less progressive jurisdictions. This is critical for three reasons.

(a) First, industry has to be able to afford to invest in the development and deployment of less carbon-intensive technology.

(b) Second, if industry is not competitive there will be less carbon tax revenue generated to support research and development of low carbon technology.

(c) Third, to survive, companies may be driven to move production of trade-exposed commodities to less progressive jurisdictions.

144. Therefore, we don't agree with OSEC's assumption. We are confident that our estimated cost of carbon is reasonable.

145. To conclude my submissions regarding project viability and economics, I will reiterate what was said by Mr. McFadyen in his opening statement,

> [Frontier] is a long-life, high quality asset. It's in a stable and progressive jurisdiction with access to a world-class supply chain and workforce.[…] Frontier is a project that will help responsibly meet energy demand whilst

> generating significant value for the region, for the province, and for Canada.[96]

VIII. ENVIRONMENTAL ISSUES

146. I will turn now to discussing environmental issues that arose throughout the proceedings. I will first address Greenhouse Gases and Climate Change, second, acid deposition, third mercury and methylmercury, and then turn to issues regarding wildlife. I will then address water quantity and quality, human health, and tailings management.

147. Before I proceed however, I think it is important to clarify Teck's position regarding the submissions of three parties – SierraClub BC, Council of Canadians and The Wilderness Committee. We will refer to these together as the ENGO's.

148. These three groups raised several concerns regarding environmental impacts, climate change and project economics and viability. Teck notes however that many of the ENGO's concerns are not specifically related to the Frontier project. These groups all appear to oppose any type of fossil fuel whatsoever with little regard for recognizing the complexities of producing a much needed resource that is in high demand around the world. They failed to identify

[96] Transcript Vol 1, 49, lines 8-19

specific Project-related issues and their concerns should be given little if any weight as a result.

149. Moreover, concerns raised by the ENGO's expose unfamiliarity with Teck's project proposal and Application. Much of the concerns raised by these groups, including concerns regarding greenhouse gases, tailings issues, consultation with Indigenous communities, are extensively dealt with and considered in Teck's Project Application, Project Update, and several rounds of SIR's. As such, Teck will rely on its substantial record already in front of the Panel to respond to the ENGO's concerns.

150. We have just a couple further points regarding SierraClub BC specifically. First, SierraClub BC read into the record several letters from individuals who were not present at the hearing and consequently, whose evidence could not be tested on cross-examination.[97] This is similarly the case with various reports and articles that were not presented to Teck prior to the hearing and whose authors were not present for cross-examination.[98] These letters, articles and reports should be therefore be given no weight.

[97] Transcript Vol 7, 1447 – 1452; 1434 – 1435; 1429 – 1434.

[98] Transcript Vol 7, 1440 – 1441; 1441- 1443; 1454 – 1463; 1468 – 1475.

151. Finally, we note SierraClub BC brought up certain incidents related to legacy issues at other project sites.[99] Teck acknowledges that, unfortunately, incidents do happen from time to time because of the complexities involved with recovering resources that the world needs. However, what is most important to take away from these incidents is that Teck has dealt with these issues, and is continuing to do so, in a responsible, transparent and committed manner. As Mr. McFadyen stated in his opening statement

> When things don't go to plan, we consistently have shown that we've committed to doing the right thing by being open, by being transparent and remaining responsible. We don't walk away.[100]

A. Greenhouse Gases and Climate Change

152. Mr. Chairman, several parties raised concerns regarding GHG emissions and the impact of the Project on Climate Change. Teck too shares concerns about climate change and believes that human activities can affect the climate system. Therefore, Teck is taking significant and real action to reduce greenhouse gas emissions from the Project and contribute to ever improving

[99] Transcript Vol 7, 1476 – 1488.

[100] Transcript Vol 1, 41 lines 4-7.

technology to bring emissions down throughout the life of the Project. Climate change is a long-term issue requiring long-term solutions. With realistic targets and investment in technology, Teck is well positioned to meet the climate change challenge on a global scale.

153. Teck's commitment to reducing its carbon footprint as much as possible is evident in the Project design. This includes the use of cogeneration for heat and power needs, and use of the paraffinic froth treatment that drastically reduces emissions per barrel of oil. Once in production, Frontier will be amongst the lowest GHG intensity of all Canadian oil sands producers, and will have a lower greenhouse gas intensity than half of all the oil currently refined in the US.[101]

154. Teck is also confident that Frontier will be aligned with Alberta and Canada's carbon emissions goals. Teck is confident that it will fit under Alberta's 100-megatonne limit, and that Frontier's relatively low greenhouse gas-intensity oil will displace reliance on higher intensity oil in the Canadian and international market.[102] Mr. Chiasson put it succinctly when OSEC asked

[101] Transcript Vol 1, 59-60.

[102] Transcript Vol 1, 211-212.

Teck how Frontier is consistent with Canada's and Alberta's emissions goals. In response, Mr. Chiasson stated,

> Teck feels that Frontier project is consistent with Alberta's and Canada's climate action goals because it offers a lower-intensity GHG production compared to other sources of oil production from the oil sands. In fact, it's in the top 25 percent, or it would be in the top 25% of all oil sands production sources on an apples-to-apples, wells-to-wheels basis. The world needs oil. Oil forecasts have suggested that the demand is going to increase. And how Teck feels it's contributing to climate action and moving towards a low-carbon economy is that the production from Frontier is going to be a lower emissions intensity than other oil sands sources.[103]

155. Moreover, Teck, through COSIA and its own initiatives, is committed to continue to look for ways to continuously improve and adapt as technologies emerge to reduce emissions intensity. As discussed by Mr. Chiasson during OSEC's cross examination, Teck has already filed in CEAA Doc 268, in its

[103] Transcript Vol 1, 208, lines 5-20.

answer to JRP Package 3 Table 3.15(b)(1) information regarding the technologies that Teck will be keeping a close eye on to see if there is an opportunity to improve the project and the Project's emissions intensity. While committing to these technologies is currently premature as they are still emerging, through Teck's commitment to adaptive management, Teck will be able to implement them if an opportunity arises.[104]

156. And this is a critical point, Mr. Chair: to impose conditions respecting the Project's emissions intensity and the adoption of set timelines respecting implementing new technology, could very well handcuff Teck in the future. Adaptive management ensures these new technologies ***are*** adopted when most effective and efficient. Teck submits that its adaptive management process can assure the Panel that Teck will adopt the best available technology economically achievable or ("BATEA") as further progress is made and that a condition in respect of specific technologies is neither necessary nor most efficient.

157. To conclude our points on greenhouse gas emissions Mr. Chair, a number of intervener submissions are regarding the challenges of achieving Canada's target and how this Project is consistent with Alberta's 100 Mt cap. It is not

[104] Transcript Vol 1, 181-182.

the role of this panel to manage Canada's commitment to global targets nor to administer Alberta's 100 Mt cap on oil sands emissions. Achieving our international targets is a complex challenge that must be addressed by the provincial and federal governments through initiatives and policy guidelines put forth by the respective governments. To reject this project on the basis of aspirational goals that have not yet been fully developed by government would be to deny this project on an arbitrary basis.

158. Finally Mr. Chair, prior to releasing Teck's Panel you asked a very important question related to different perception associated with the GHG intensity of oil sands development. Specifically, you asked, and I quote:

> Teck claims it will have one of the lowest GHG intensities of any of the Canadian oil sands projects and be a top quartile best-in-class performer. But other hearing participants seem to have a very different view of the project. I'm just wondering if you have any comments on why the disparity of views?[105]

159. Mr. Chair, it is true that a number of interveners are of the view that oil sands production is inconsistent with a lower carbon intensity world. But this view

[105] Transcript Vol 5, 1206, lines 3-9.

is erroneous. The evidence is clear in this proceeding that oil sands production from mines using a paraffinic froth treatment process is globally competitive on a GHG-intensity basis. As Mr. Chiasson said in response to your question:

> Teck's view is the world has a demand for that oil, and by putting forward a low GHG intensity option that overall that's better for Alberta, that's better for Canada, that's better for the global move towards a lower intensity economy. Because those barrels would be produced or replaced by larger intensity than what Teck can do.[106]

B. Acid Deposition

160. Turning to acid deposition, Teck completed a detailed assessment of acid deposition that concluded there would be negligible risk of acidification of waterbodies as well as negligible risk of terrestrial exceedance in the regional study area under both the Application and Planned Development Cases.[107] The assessment followed established procedures and frameworks.

161. Despite there being virtually no questions from any parties through five rounds of SIR's and two rounds of AIR's regarding acid deposition, three

[106] Transcript Vol 5, 1206, lines 18-24.

[107] CEAA Doc 163, Project Update, Volume 3, Section 7.8.

weeks prior to the hearing, ECCC submitted an assessment claiming that a large geographical region was at risk of acidification.[108] Specifically, in Dr. Makar's rebuttal report and direct evidence, Dr. Makar concluded that 5 lakes were found to be acidifying over the full RAMP data set years, and 10 lakes were becoming more acidic between 2010 – 2015.[109]At the hearing, ECCC further claimed that the large physical region that was at risk, was "approximately half the size of the Province of Alberta".[110]

162. Teck is of the view that the ECCC Submissions and submissions by Dr. Makar are incomplete, inaccurate and are the cause for potential confusion. Therefore, they should not be given any weight by the panel.

163. With regards to the incompleteness of the assessment done by the ECCC, there are several issues.

164. First, the ECCC submission was based on a study published by Makar et al in 2018, which failed to include any project-specific information or any future development scenarios. The study was wholly unrelated to the Frontier Project.

[108] CEAA Doc 489, ECCC Submission Topic 5.2.

[109] Transcript Vol 17, 3540 line 21 to 3541 line 3.

[110] Transcript Vol 15, 3084, lines 7-9.

165. Second, while the Makar et al (2018) study cited the Oil Sands Regional Aquatic Monitoring Program or RAMP data, it did not specify how the data was used, nor did it comment on RAMP's analytical or statistical techniques.

166. Third, ECCC failed to cite lake acidification in their submission and appear to only have looked at air quality modelling.[111]

167. Fourth, based on RAMP data, the lakes referred to in Makar et al. as showing "recent acidification" have since increased in pH and therefore have actually been showing a decrease in acidity. The actual facts show the complete opposite of the predictions of the model used in Makar et al., which the ECCC Submission failed to address.[112]

168. Fifth, the ECCC submission failed to address the fact that the 50 RAMP-monitored lakes have predominantly been increasing in pH over the past 15 years. As stated by RAMP (2016), "An increase in pH such as this is the opposite effect expected under an acidification scenario."[113] All lakes were found to be either increasing or not significantly changing in pH over this time period.

[111] CEAA Doc 489, ECCC Topic 5.2 at PDF 170.

[112] CEAA Doc 504, Appendix 7 at PDF 378.

[113] CEAA Doc 504, Appendix 7 at PDF 375.

169. In addition to incompleteness, Teck's experts also identified several significant errors in the ECCC acid deposition analysis.

170. Mr. Chair, Teck further submits that not only are Dr. Makar's submissions incomplete and include significant errors, they also introduce considerable confusion for the Panel.

171. First, conclusions relied upon by Makar et al. to show "recent" acidification were based on a study with a vastly different temporal reference frame, that being the 1940s to 1970s, a time frame prior to the majority of oil sands development and before current emissions controls. In fact, both of the lakes referred to as showing "recent" acidification have since increased in pH, and as stated earlier, showed the opposite of what Dr. Makar's model predicted based on contemporary data.[114]

172. Second, Dr. Makar's reanalysis of RAMP data was rife with data cherry-picking and confirmation bias. In essence, Dr. Makar made his findings of increasing regional acidity by deliberately excluding the lack of significance of any decreasing trends and by re-analyzing a shorter subset of the data to skew his findings in favour of acidification.

[114] CEAA Doc 504, Appendix 7 at PDF 378.

173. To justify ignoring the statistical significance, Dr. Makar quoted the American Statistical Association[115] as stating "Scientific conclusions and business or policy decisions should not be based on whether a p-value passes a specific threshold"[116] This however was a clear mischaracterization of the academic literature. It was established during cross-examination that not only did Dr. Makar's own published work itself rely on the p-value for statistical significance,[117] but it was further shown that Dr. Makar had misquoted the paper he had relied upon to dismiss the applicability of the p-value. When shown that his reproduction of the quote omitted the key term "only", where the quote should have said

> "Scientific conclusions and business or policy decisions should not be based **only** on whether a p-value passes a specific threshold"

Dr. Makar conceded that "I should have the 'only' in there".[118] And when asked to identify where in the ASA paper the ASA had concluded that use of

[115] CEAA Doc 648, Document 17.

[116] CEAA Doc 609 at PDF 4.

[117] CEAA Doc 648 Document 17; CEAA Doc 655; Transcript Vol 17, 3532.

[118] Transcript Vol 17, 3537, lines 14-16.

the p-value was invalid, Dr. Makar conceded that he had mischaracterized the ASA's conclusions.[119]

174. As described by Dr. Parrott on behalf of the Government of Canada,[120] the p-value is a valid test of significance provided that it is not a sole line of evidence. This interpretation is in line with the actual ASA recommendation and in line with how both RAMP (2016) and Teck's response[121] had treated the statistical significance.

175. Finally and related to significance assessment, the ECCC evidence misleads the panel because it limited its analysis only to lakes that are predicted to decrease in pH, even though those decreases were very small and not statistically significant, while ignoring all other data showing the contrary. As stated in the ASA's guidance on p-values and acknowledged by Dr. Makar, the ASA wrote that,

> "Cherry-picking promising findings, also known by such terms as data dredging, significance chasing, significance questing, selective inference, and "p-hacking," leads to a

[119] Transcript Vol 17, 3538, lines 14-25.

[120] Transcript Volume 17, 3528.

[121] CEAA Doc 504, Appendix 7.

> spurious excess of statistically significant results in the published literature and should be vigorously avoided."[122]

176. Yet, Mr. Chair, this "p-hacking" or cherry-picking is exactly what was done. As we had alluded to earlier, Dr. Makar's reanalysis was done by assessing only a subset of RAMP data in order to find more lakes with decreasing pH. It is well known, and obvious from the RAMP data, that there is considerable variability in the lake pH data. Therefore, the shorter the time frame, the more likely it is that random variability will lead to short-term declines in pH if statistical significance is ignored, which it was. In other words, Dr. Makar's assessment only looked for, and took into account, confirming evidence.

177. For the foregoing reasons, Teck suggests that the panel should give no weight to the Government of Canada submission Topic 5.2 or Dr. Makar's testimony. Teck's conservative analysis of acidification that concluded there would be negligible risk of acidification of waterbodies and terrestrial areas in the regional study area under the Application and Planned Development Cases.[123] This remains unchallenged and should be relied upon by the Panel.

[122] Transcript Vol 17, 3539, lines 8-25.

[123] CEAA Doc 163, Project Update, Volume 3, Section 7.8.

178. Mr. Chairman, it is extremely concerning that a public servant would unduly alarm the public with claims that an area "as large as Germany"[124] are being acidified, when all the monitoring shows that this is not the case. The Energy Resources Conservation Board – as it then was – in a case involving the Sturgeon Upgrader[125] made clear that purported experts appearing before the panel should be cautious not to create needless alarm, in particular when it is not backed by evidence. Specifically, the Board stated,

> The Board is seriously concerned that Dr. Du's assertions may have inappropriately and needlessly alarmed the residents[…] The Board expects experts at ERCB hearings to have a better understanding of the material before making definitive and potentially alarmist statements.[126]

C. Mercury and Methylmercury

179. Mr. Chairman, I will now discuss mercury and methylmercury. ECCC has provided recommendations with regards to monitoring and modelling the

[124] Transcript Vol 9, 1942, line 19.

[125] ERCB Decision 2009-002 (January 20, 2009) Petro-Canada Oil Sands Inc, "Application to Construct and Operate an Oil Sands Upgrader in Sturgeon County"[ERCB Decision 2009-002] at 32.

[126] ERCB Decision 2009-002 at 32

potential for inorganic mercury and methylmercury to release to the Peace-Athabasca Delta as a result of the Project.[127]

180. Teck does not agree with Recommendations 7.2 and 7.3 regarding mercury and mercury methylation.[128]

181. With respect to mercury and methylmercury levels in aquatic environments, Dr. Steffen for ECCC stated:

> 182. […] if you flood an area and create a reservoir, you have a lot of contributing factors that will impact how mercury can be methylated within that new reservoir system. What has happened in many reservoirs that have been built over time is that mercury spikes. It can spike within a week or two of it being flooded, depending again on the ecosystem that is there.[129]

[127] Transcript Vol 15, 3078 line 11, 3086 lines 11-16; see also CEAA Doc 489 at PDF pages 242-243.

[128] Transcript Vol 15, 3127 lines 8-13; CEAA Doc 504 at 31-34.

[129] Transcript Vol 16, 3367, lines 7-14.

183. When asked whether Dr. Steffen was referring to reservoirs that had been excavated, Dr. Steffen indicated that she was referring to Lake Melville in Labrador – an unexcavated hydro dam reservoir.[130]

184. Mr. Chairman, Teck submits that this is not relevant or analogous for fish habitat compensation lakes in the oil sands region, particularly that proposed by Teck.

185. Teck proposes to fully excavate the fish habitat compensation lake and the OSSP below grade and remove all organic top soils. Therefore, the most important contributing factor that Dr. Steffen describes will be absent.

186. When asked whether Horizon Lake was fully excavated, Ms. Martens of DFO confirmed that Horizon Lake was only partially excavated.[131]

187. Again, Mr. Chair, this is not analogous to Teck's proposed fish habitat compensation lake as Teck will fully excavate and remove all organic top soil. Teck has voluntarily proposed to undertake this removal at significant cost to itself. Teck submits that there is little incentive to undertake this removal, recognized as leading and effective mitigation, if Teck will simply be required

[130] Transcript Vol 17, 3520, lines 20-25; Transcript Vol 17, 3521, lines 1-18.

[131] Transcript Vol 17, 3522, lines 11-14.

to conduct unprecedented modelling and monitoring being put forth by ECCC in Recommendations 7.2 and 7.3 for an oil sands compensation lake.

188. Dr. Steffen also provided clarification to her prior statements about increasing mercury and methylmercury levels. Specifically, Dr. Steffen confirmed that there was a slight increase in the maximum concentration of Horizon Lake, which is partly unstripped and contains the organic matter that drives the mercury methylation process, but that other lakes (such as Muskeg Lake) have actually shown a decrease in mercury and methylmercury concentrations.[132]

189. Teck agrees with Dr. Steffen's clarification. In addition, Teck submits that Ms. Martens evidence is more accurate. In response to whether constructed compensation lakes are showing elevated levels of mercury or methylmercury that exceed background levels, Ms. Martens stated:

> With each lake we've received a number of monitoring reports, and with each lake we have seen an increase in mercury both in the water and in the fish, with a consequent decline afterwards.[133]

[132] Transcript Vol 17, 3554 line 5 to 3555 line 6.

[133] Transcript Vol 17, 3516, lines 13-21.

190. Mr. Chairman, all fully excavated compensation lakes considered in Teck's assessment show no measured level of mercury or methylmercury that exceed background levels. These lakes are the most representative analogs for Teck's proposed compensation lake.

191. Also, Mr. Chairman, the draft detailed fisheries offsetting plan in response to JRP IR 2.1, at Appendix 2.1 includes mitigation, monitoring and adaptive management that will verify that the primary mitigation of organic soil removal will be successful in a manner consistent with existing compensation lakes in the oil sands region.

192. When asked whether other producers have been required to conduct the monitoring and modelling detailed in Recommendation 7.2 and 7.3, Ms. Martens said "maybe not as what we're requesting of Teck."[134]

193. When asked by the Secretariat about the mitigation measures to reduce adverse effects of methylmercury accumulation, Ms. Martens stated:

> To date we have used removal of the vegetation before putting water in the lake as a mitigation. We still see a

[134] Transcript Vol 17, 3519 line 23 to 3520 line 14.

> spike in mercury initially and then it comes down, as we've previously discussed.[135]

194. Sir, not only does Teck propose to remove the vegetation before putting water in. Teck proposes to go further than the DFO requirements by removing the organic soil horizon as well.

195. Mr. Chairman, Recommendation 7.3 proposes modelling of the downstream environment and investigation of potential mitigation measures for potential downstream loadings.

196. ECCC indicated that there are ten monitoring stations along the Athabasca River. When asked whether they have identified an increase in mercury or methylmercury levels, Dr. Parrott for ECCC stated that "my recollection is there were no trends in mercury" and added that she would have to review the report if certainty was required.[136] Teck has provided data showing 130 samples collected by industry, government and other sources in the Athabasca River upstream and downstream of oil sands development.[137] This data shows that mercury is the same as or even lower downstream of oil developments.

[135] Transcript Vol 17, 3616, lines 17-20.

[136] Transcript Vol 17, 3524 line 22 to 3525 line6.

[137] CEAA Doc 163, Teck Project Update, Vol. 2, Section 5.4.2.1, Tables 5-10 and 5-11.

197. Given that four compensation lakes currently exist, there is credible evidence to show that mercury generation in compensation lakes and potential transport downstream in the Athabasca River is not an issue.

198. Mr. Chairman, Teck submits that the downstream monitoring and modelling requested within ECCC Recommendation 7.3 is more appropriately addressed by ongoing regional initiatives such as the Joint Canada-Alberta Implementation Plan for Oil Sands Monitoring or JOSM and that the responsibility for monitoring regional impacts should not be placed on Teck alone.

199. Teck has provided alternative language to ECCC Recommendations 7.2 and 7.3 that it would agree with as a recommendation for mercury and mercury methylation in Teck's Reply Submission dated September 12, 2018.[138]

200. Mr. Chairman, Teck respectfully requests that Teck's proposed language be included as a condition of any approval and that the Panel not adopt ECCC proposed Recommendations 7.2 and 7.3.

201. DFO also made recommendations with respect to mercury and mercury methylation.

[138] CEAA Doc 504 at 31-34

202. DFO stated that its intention in making Recommendation 5 was to support the recommendations made by ECCC in their submission and acknowledge their expertise and the concerns raised by Indigenous communities.[139]

203. Mr. Chairman, as you are well aware, Teck has concluded agreements with all 14 Indigenous communities it identified as potentially being affected by the Project. This means that Teck has sufficiently addressed all outstanding concerns of these communities that are within Teck's control.

204. In addition, Teck conducted a number of fisheries offsetting workshops with government and Indigenous communities. When asked whether these workshops represented a collaborative process, Ms. Martens, who attended most of the workshops on behalf of DFO, agreed.[140]

205. DFO further stated:

> Should this Project be approved and the issuance of a Fisheries Act authorization be sought by the proponent, any authorization issued by DFO shall contain conditions that ensure mitigation measures are implemented to protect fish and fish habitat, monitoring and follow-up

[139] Transcript Vol 15, 3127, lines 8-17.

[140] Transcript Vol 17, 3515, lines 13-23.

> programs to validate and verify predictions are undertaken and that impacts to fish and fish habitat are adequately offset.[141]

206. Mr. Chairman, Teck is in support of DFO's Recommendation 5 for the Project. In addition, Teck submits that any subsequent conditions placed on Teck via a DFO approval should align with conditions attached to other approved fish habitat compensation lakes in the region that are on a positive trajectory to becoming self-sustaining aquatic ecosystems.

207. Mr. Chairman, Health Canada has also recommended the monitoring of methylmercury concentrations in fish throughout the lifetime of the Project in any water body that could be potentially impacted by the Project and from which people are harvesting or consuming fish.[142]

208. As indicated in Teck's Reply Submission, Teck partially agrees with the recommendation, but believes that appropriateness calls for limiting Teck's monitoring efforts to the Frontier fish habitat compensation lake.[143]

[141] Transcript Vol 15, 3127, lines 18-25.

[142] Transcript page 3115 lines 17-25, page 3116 line 1-3.

[143] CEAA Doc 504 at PDF 40.

209. Mr. Chairman, monitoring any water body that could be potentially impacted by the Project is simply not possible. Teck would have no way of determining whether the impacts are arising from the Frontier Project or other development. Instead, if monitoring shows that Teck is directly affecting watercourses or waterbodies beyond the compensation lake, Teck would address this through their mitigation, monitoring and adaptive management plan.

210. As such, Teck submits that the monitoring of water bodies other than Teck's fish habitat compensation lake is most suitably and efficiently addressed by ongoing regional initiatives such as JOSM.

IX. WILDLIFE

211. Turning now to wildlife issues. Mr. Chairman, Teck has outlined extensive measures to mitigate potential environmental effects, specific to wildlife, as is evidenced in our comprehensive and robust Environmental Impact Assessment. That said, there are four species, or species groups that have been clearly identified during this hearing process as being of particular concern.

212. These include: 1) the Ronald Lake Bison Herd; 2) Caribou; 3) Whooping Crane; and, 4) Migratory Waterfowl. I'd like to now take a moment to speak to each of these in turn.

A. Ronald Lake Bison Herd

213. Mr. Chairman, Panel, as Mr. McFadyen indicated in his opening statement, Teck fully recognizes and respects the importance of the Ronald Lake Bison herd to Indigenous communities.

214. As such, Teck has engaged in extensive consultation with stakeholder groups and Indigenous communities alike in this regard; listening and carefully considering the concerns of these groups.

215. Teck understands that the concerns surrounding the Ronald Lake Bison herd relate to its long-term viability as a disease-free population, Indigenous communities' ability to hunt the herd sustainably, and the importance of hunting to cultural maintenance.

216. Mr. Chairman, Panel, I will remind you that Teck has worked alongside Indigenous communities and government agencies for many years; Teck has gone above and beyond just mitigating potential project impacts on the herd.

217. Teck has taken tangible action and demonstrated real results; showing what can happen when there is thoughtful collaboration between industry, stakeholders and Indigenous communities

218. Not only has Teck developed a Project-specific mitigation, monitoring and adaptive management plan specifically for the herd;[144] but as highlighted by Mr. McFadyen in his opening statement, Teck has been a leader in the following additional initiatives:

i. Funding and support for additional studies of the Ronald Lake bison herd,

ii. Support to the province, towards the development of a Wood Bison Management Plan,

iii. Advocating alongside First Nations for the listing of the herd under the Wildlife Act, which has resulted in the prohibition of non-Indigenous hunting, and

iv. Supporting efforts led by Mikisew Cree First Nation to establish a Conservation Stewardship Area south of Wood Buffalo National Park.[145]

[144] Teck Response to JRP IR 7.5, Appendix 7.5.

[145] Transcript Vol 1, 56, line 21 to 57 line 11.

219. Teck has already contributed approximately $2.5 million in support of these efforts.[146]

220. Mr. Chairman, Panel, Teck's efforts will not stop here. Teck is also committed to continuing its participation in and funding of the Ronald Lake Bison Herd Technical Team.[147] This multi-stakeholder group is well poised to support the sound management of the herd and its range, and therefore contribute to its long-term viability as a disease-free population capable of sustainably supporting Indigenous hunting.

221. Teck's herd-specific mitigation, monitoring and adaptive management plan includes measures Teck is committed to undertaking to limit the size of disturbance, implementing ongoing reclamation to create high quality bison habitat, and ensuring safe wildlife movement corridors.

222. Mr. Chairman, we submit that taking into account these mitigation measures, the Frontier Project is unlikely to have a significant adverse effect on the Ronald Lake Bison Herd.

223. Panel, the most significant risk to the herd is disease transmission from the bison in Wood Buffalo National Park. This risk has existed since the diseased

[146] Transcript Vol 1, 57, lines 14-15.

[147] Transcript Vol 1, 57, lines 16-18.

bison were introduced into the Park nearly a century ago.[148] This risk exists today and will exist whether or not the Frontier Project proceeds.

224. The Frontier Project will not increase this risk of disease transmission and Teck looks forward to continuing to play its part in promoting the viability and sustainability of the herd. I would now like to speak briefly to the evidence that supports this conclusion.

225. Mr. Chair, Teck acknowledges and respects Indigenous concerns respecting the herd. However, Teck submits that laying responsibility for the herd solely on Teck would allow the responsible party, government, to set aside their obligations. Sir, this is both improper and jeopardizes the viability of the herd.

226. Sir, Teck agrees that more work needs to be done with respect to the herd. Teck also agrees that the evidence shows that the herd will be displaced. However, Teck is of the view that the evidence clearly shows that: 1) the herd will continue to have sufficient forage or carrying capacity; and, 2) that the evidence put forth by certain experts, such as Mr. Wiacek, Dr. Komers and Dr. Kopach, is unreliable. As such, Teck submits that when considering mitigation measures for the Ronald Lake bison herd, this Panel ought to focus

[148] Transcript Vol 1, 58, lines 5-12.

on the Joint Recommendations and Submission put forth by ACFN, MCFN and Teck.

227. Mr. Chair, the point must be borne out of the evidence, and must be shown rigorously through Traditional Knowledge and/or western science. To take bold assertions of significant impact or current harm at face value would undermine the legitimacy of the decision-making process. Teck does not dispute the Traditional Knowledge it has relied upon or advanced by others in this proceeding. However, Teck submits that its evidence and its rigour therein is the most reliable for this Panel when determining Project-specific effects.

228. Teck's analyses were developed and vetted by a highly competent team including in-house experts on habitat suitability, connectivity, and population viability analysis modelling, bison researchers from the University of Alberta, as well as third party biologists like John Nishi, a recognized expert on wood bison who recently updated the Alberta Government's Bison Status Report for Alberta in 2017. As such, Teck submits that the most reliable evidence that ought to be relied upon by the Board is that provided by Teck.

229. As stated by DeMars et al. 2016[149] and shown in information package 10,[150] the Ronald Lake bison herd has not changed its range since radio telemetry monitoring began in 2013, prior to the 2014 winter drilling program. In addition, Teck's winter forage carrying capacity assessment clearly demonstrates that the herd is not forage limited in winter under existing conditions.[151] However, based on current knowledge of the distribution of diseased bison in Wood Buffalo National Park relative to the range of the Ronald Lake herd, the risk of the transmission of bovine tuberculosis and brucellosis from Park bison to the Ronald Lake bison herd under existing conditions is high.[152] ECCC and Parks Canada in their August 31 filings both agreed that the current risk of disease transmission is high.[153]

230. If the Project is approved as proposed, Ronald Lake bison will be displaced from the Project Disturbance Area as Teck stated in JRP IR 7.5c and 7.5e. However, Teck's winter forage carrying capacity assessment clearly demonstrates that Ronald Lake bison herd is not forage-limited in winter

[149] DeMars, C.A., S.E. Nielsen and M.A. Edwards, 2016, as cited in Response to JRP IR 7 at PDF 21.

[150] CEAA Doc 371, Teck Response to JRP IR 10.20 Errata.

[151] CEAA Doc 293, Teck Response to JRP IR 7.5e; CEAA Doc 504 at 338.

[152] CEAA Doc 293, Teck Response to JRP IR 7.5c.

[153] CEAA Doc 293, Teck Response to JRP IR 7.5c; CEAA Doc 489 CEAA Doc 489 at PDF 70, 78, and 408.

within its range with the Project at full build-out.[154] Because the herd is not forage-limited within their range and given that the herd's range has not changed since radio telemetry monitoring began in 2013, the Project is unlikely to increase the risk of disease transmission, a risk that under existing conditions has been agreed upon by all parties to be high.

231. Teck filed a rebuttal to Parks Canada's and ECCC's August 31, 2018 filings.[155] That report clearly refutes ECCC's and Parks Canada's findings regarding the effects of the Project on the Ronald Lake bison herd. First, when new information regarding forage production collected by the University of Alberta is applied to the carrying capacity assessment and conservative, but reasonable, reductions in forage availability as a result of winter conditions are applied, the winter carrying capacity estimate of the herd's range continues to demonstrate that the herd is not forage limited in winter and indeed can support growth of the herd.[156]

232. In addition, Panel, there will be no increase in linear disturbances within the herd's range north of the Project and therefore arguments put forward by

[154] CEAA Doc 504, Attachment 5 at PDF 337.

[155] CEAA Doc 504, Attachment 5.

[156] CEAA Doc 504, Attachment 5 at PDF 337.

Parks Canada[157] regarding potential changes to predator-prey relationships as a result of increases to linear disturbance are not applicable. ECCC's[158] arguments regarding potential changes to predatory-prey relationships between bison and wolves using research results pertaining to moose-wolf relationships in the oil sands region was also clearly refuted by Teck.

233. The March 2018 aerial survey of the Ronald Lake bison herd by Alberta Environment and Parks provided an estimate of 174 bison (95% CI 118-261).[159] AEP stated that, based on the wide confidence intervals and the confidence intervals of herd estimate in 2015, there is no evidence to suggest that the herd has declined.[160]

234. In their direct evidence Parks Canada stated that it disagreed with Teck's position that the herd may be increasing.[161] This was not Teck's perspective going into the hearing. Teck reported census numbers for the herd in their response to JRP IR 7.3a.[162] In their September 12 submission to the JRP, Teck provided AEP's updated census 2018 results of 174 and their statement that

[157] CEAA Doc 489 at PDF 407-408.

[158] CEAA Doc 489 at PDF 74-75.

[159] CEAA Doc 504, Attachment 27 at 253 and 1058.

[160] CEAA Doc 293, Response to JRP IR 7 at PDF 18.

[161] CEAA Doc 489 at PDF 407.

[162] CEAA Doc No, 293, Response to JRP IR 7 at PDF 14-18.

there was no evidence of the herd declining.[163] However, under cross examination regarding the size of the herd, Ms. Cumming of Parks Canada appeared to suggest that the herd was declining when she stated

> "The numbers speak for themselves. There were 210 bison in 2015 and 133 in 2018, and so we questioned the increasing trend as a result of that."[164]

235. As such, Mr. Chair, Parks Canada's knowledge of the herd appears to be incomplete.

236. The Population Viability Analysis or PVA for the herd submitted by Teck in their September 12, 2018 filing demonstrated that the herd could tolerate a small amount of annual harvest (5 – 10) but the sex ratio composition of the harvest had a large effect on the likelihood of population survival. Additional mortality as a result of harvest, rather than habitat loss because of the Project, appeared largely responsible for projected population declines.[165]

237. The rigorous quantitative connectivity analysis submitted by Teck in their September 12, 2018 filing demonstrated that although there are areas of high

[163] CEAA Doc 504, Attachment 27.

[164] Transcript Vol 16, 3436, lines 8-13.

[165] CEAA Doc 504, Attachment 4, Section 2 at PDF 282-283.

and low connectivity within the herd's range, there are no barriers to movement.[166]

238. Dr. Komers presented the results of his Ronald Lake bison herd population viability analysis or PVA. He stated, "Because of the poor data in the Ronald Lake bison herd I created a default population that behaves approximately like an average population, bison population in Canada."[167]

239. Dr. Komers agreed that by running 100 iterations he obtained a relatively crude picture of the Ronald Lake bison herd based on his estimated input data and that a more rigorous description of the simulated population's behaviour would be obtained if more iterations were run.[168] Given that Dr. Komers' own report states the herd is relatively stable, the fact that his default model suggests that the herd has only a 73% chance of persisting over the next 100 years suggests that his input data are problematic and unreliable as Teck described in their September 12, 2018 submissions.[169]

[166] CEAA Doc 504, Attachment 4, Section 3 at PDF 305-307.

[167] Transcript Vol 12, 2450, lines 9-12.

[168] Transcript Vol 12, 2565 line 23 to 2566 line 3.

[169] CEAA Doc 504, Attachment 3 at PDF 251-253.

240. In addition, given that most introduced wood bison herds tend to grow even with predation (e.g., Hay Zama, MacKenzie) again suggests that Komers' input data do not represent those of an average bison population in Canada.[170]

241. When questioned regarding the effect of running 1,000 or more versus 100 iterations for his PVA, Dr. Komers said that running more iterations would reduce the spread around the average "but they still have an average."[171] This response is misleading because it suggests that the average itself is not affected by the choice of 100 iterations. This is incorrect. Each time 100 iterations are run, the average will likely fluctuate greatly between 0% and 100% survival. Dr. Komers provided the Panel with one run of 100 iterations which provides little information regarding the likelihood of the herd's survival over 100 years.[172] Increasing the number of iterations increases our confidence in the average as well as reducing the variation around the average.

242. For these reasons and many others outlined in Teck's September 12, 2018 submission, Dr. Komer's PVA cannot be relied upon for final conclusions on the future of the herd.

---

[170] Alberta Environment and Parks and Alberta Conservation Association. 2017. Status of the American Bison (bison bison) in Alberta. Update 2017. Alberta Status Report No. 38. Edmonton, AB at 138, as cited in CEAA Doc 504 at PDF 271.

[171] Transcript Vol 12, 2567, lines 1-6.

[172] CEAA Doc 504 at 244 and 253-254.

243. Dr. Kopach presented the results of his habitat availability and connectivity modelling. As described in Teck's September 12, 2018 submission to the JRP, Dr. Kopach violated standard resource selection function or RSF model building protocols in his habitat availability modelling making the model's outputs unreliable. His connectivity modelling is equally unreliable.[173]

244. For example, he applied a resistance value of 10,000 to water "reflecting the observation that bison rarely cross rivers or spend time on lakes even in winter."[174] According to the same report, resistance values of 1 through 1,000 were applied to reflect low to high resistance to bison movement. Under cross-examination, he stated that a value of 10,000 did not mean that water was a complete barrier; there's just a lower likelihood of it being crossed.[175] Although technically correct, Dr. Kopach's response is misleading. With most resistance values on the landscape between 1 and 1,000, assigning a value of 10,000 to water makes the likelihood of crossing water features virtually impossible in Dr. Kopach's modelling framework.

245. When questioned if that number may be lower if there were more examples of bison crossing water features, he stated "I guess I would go by what the

[173] CEAA Doc 504 at PDF 244, 247-250.

[174] CEAA Doc 497, Appendix 1C, MSES 2017 Report at PDF 741.

[175] Transcript Vol 12, 2571, lines 7-15.

data showed us[.]"[176] Teck's connectivity analysis clearly showed that Ronald Lake bison cross water features regularly and as stated by Dr. Kopach, IK suggests that the herd has crossed the Athabasca River in the vicinity of the Firebag River in the past.[177] For these reasons and many others outlined in Teck's September 12 submission, Kopach's habitat availability and connectivity modelling cannot be relied upon for decision-making.

246. Before we turn to additional unreliable evidence regarding the Ronald Lake bison herd, we want to address the reliable evidence.

247. Several witnesses including Dr. Shury with Parks Canada and Mr. Beauchamp, a wood bison outfitter that has hunted the Ronald Lake herd, both indicated that bison swim.[178] This further substantiates the peer-reviewed literature on the subject.[179]

248. Mr. Peter Hoffman, Darryl Shevolup and Chuck Shevolup, all trappers whose trap lines overlap the Ronald Lake bison herd range and the outfitter, Mr. Beauchamp, spoke about their own harvests of bison from the Ronald Lake herd, as well as harvests of others. Mr. Peter Hoffman indicated that Mr.

[176] Transcript Vol 12, 2572, lines 14-15.

[177] Transcript Vol 12, 2571 line 19 to 2572 line 2.

[178] Transcript Vol 16, 3398, lines 9-11; Transcript Vol 14, 2874 line 25 to 2875 line 2.

[179]CEAA Doc 504 at PDF 269.

Beauchamp harvested as many as eight bison in one day[180] and Mr. Darryl Shevolup described the harvest as a "free-for-all" that has been going on for a "long, long time."[181] Based on those discussions at the hearing and Teck's PVA results that suggest a harvest greater than 5 – 10 bison annually could result in a decline, it is entirely plausible that the herd has not grown in the past decade because of human harvest. The cessation of non-Indigenous hunting since 2016 is likely to improve the potential for the Ronald Lake herd to grow and their population size will continue to be monitored by Alberta Environment and Parks.

249. Dr. Shury confirmed in his paper and his testimony that disease transmission from the diseased wood bison in Wood Buffalo National Park to neighboring disease-free herds has been an issue for a long time. He also agreed that disease transmission can be managed, but that getting policy decision-makers to make the hard decisions that might be unpopular in terms of the best way of managing that disease would be very challenging.[182]

250. Ms. Cumming testified that a multi-stakeholder committee chaired by Parks Canada would be looking at disease risk for the Wood Buffalo National Park

[180] Transcript Vol 14, 2952, lines 1-3.

[181] Transcript Vol 14, 2954 lines 6-7.

[182]Transcript Vol 16, 3439 line 7 to 3440 line 2.

including that risk of disease transmission to the Ronald lake herd, whether the Project goes ahead or not.

251. According to Ms. Cumming' testimony, although Parks Canada was "starting to become aware" around 2014-2015 that the Ronald Lake bison herd was disease-free, Parks Canada is only now beginning a process to address this issue.[183] It is only an issue with the Ronald Lake herd now because of the work initiated by AEP in 2012 and supported by Teck that concluded that the herd is disease free. Although Parks Canada committed to developing a disease containment strategy by 2012 in their 2010 Wood Buffalo National Park Management Plan, a strategy has yet to be produced, notwithstanding the recognition by Parks Canada that since 2013-2014 there has been and continues to be a high risk of disease transmission from diseased Wood Buffalo National Park bison to the disease-free Ronald Lake herd.

252. Even though containment of disease has been a key issue for Wood Buffalo National Park for a long time, Ms. Cumming did not provide a timeline for the completion of this work.

253. I will turn now to the only other technical evidence on Bison submitted by of the Government of Canada through Mr. Wiacek, ECCC's witness on bison,

[183] Transcript Vol 16, 3437 line 23 to 3438 line 11.

Sir, Mr. Wiacek's evidence was both overstated and inaccurate on several occasions which I will summarize.

254. First, in his direct evidence he stated that Teck relied on recent telemetry data to describe the core range, in reference to the population level 95% UD and the female winter 80% UD used by Teck.[184] An 80% UD is considered a core range. However, the 95% UD is not a core range of the herd and should not be referred to as such. As Teck outlined in their September 12, 2018 submission,[185] a commonly recognized definition of an animal's home range is the smallest area associated with a 95% probability of finding that animal.[186] As such, the choice of the 95% UD based on the composite of males and females from 2013-2017 to describe the herd's range is reasonable.

255. Second, in his written submission, Mr. Wiacek referenced Belanger et al. (2017) as support for his use of the 99.9% Utilization Distribution to determine the range of the herd; he stated that "Although Teck did not evaluate total range, recent work by Belanger et al….on Ronald Lake bison has focused on a 99% UD."[187] However, in his testimony he agreed that the

[184] Transcript Vol 15, 3150, lines 15-25.

[185] CEAA Doc 504, Attachment 5.

[186] CEAA Doc 504, Attachment 5 at PDF page 334.

[187] Transcript Vol 16, 3470 line 21 to 3471 line 4.

only place the 99.9% UD was used in that report was in an appendix that discussed an analysis of forage production by land cover type and that all discussion of home ranges in Belanger et al used the 80% and 95% UD's.[188] Mr. Chair, Belanger's report **did not** focus on the 99% UD.[189]

256. Third, Mr. Wiacek misled the Panel when discussing carrying capacity and the calculations he used to determine carrying capacity of the Ronald Lake herd.

257. In his direct evidence, he stated that his approach was supported by other literature including Hamilton (2005) and again, that other studies, including Teck's, used both adjustments to calculate carrying capacity.[190] In cross examination, he was asked if Hamilton did one adjustment for snow and ice cover and that adjustment was a reduction of 66 percent. He responded by saying that, "Hamilton also did a different amount of clipping of vegetation to account for difference in the grazing intensity of bison. So he incorporated a grazing amount adjustment using a different method by clipping the height

[188] Belanger, R.J., C.A. DeMars, L.J. Hecker, M.A. Edwards, and S.E. Nielsen. 2017. Ronald Lake Wood Bison Research Program: Annual Report 2017. University of Alberta, Edmonton, Alberta, Canada at 77, as cited in CEAA Doc 504 at PDF 256.

[189] Transcript Vol 16, 3472, lines 2-24.

[190] Transcript Vol 16, 3474 line 2 to 3475 line 15.

of vegetation much higher than you are typically doing in other studies for forage biomass."[191]

258. Further Mr. Wiacek stated that the Hamilton et al. 2005 study was different from Hamilton's 2005 thesis and that the latter provided additional detail that was not provided in Hamilton et al (2005).[192] First, there is no difference in the description of methods regarding clipping provided by both reports. Second, the clipping height used by Hamilton (7 – 8 cm), although greater than what is typically used when determining forage production, does not approach the two-thirds value of the height of preferred forage species (45-81 centimetres) like *Carex atherodes* that Mr. Wiacek used in his calculations.[193]

259. To arrive at ECCC's conclusion that the herd was possibly forage limited if the Project was approved, Mr. Wiacek reduced forage production by almost 92% in the Application Case by including two reductions of 67% and an additional 25% reduction to account for the potential for weeds across the entire bison range. Mr. Wiacek could not point to any other literature to support his approach.

[191] Transcript Vol 16, 3477 lines 17-23.

[192] Transcript Vol 16, 3479 line 25 to 3480 line 5.

[193] Hamilton, S.G. 2005. *Estimating Winter Carrying Capacity for Bison in Wood Buffalo National Park*. M.Sc. thesis, University of Alberta, Edmonton, Alberta, as cited in CEAA Doc 293 at PDF 90.

260. Third, Mr. Wiacek stated in his testimony that he did not rely on the MSES (2017) report and that it did not influence ECCC's conclusions in any way.[194] However, in ECCC's August 31 submission, he referred to the MSES report several times to support key ECCC conclusions.

261. Specifically, Mr. Wiacek referred to Figure 2 in MSES 2017 as evidence that the Ronald Lake herd did not range as far into WBNP as they do now.[195] Based on this figure and Parks Canada aerial survey data, he concludes that the most plausible hypothesis for long-term separation and isolation of the herds is limited historical incursion of Ronald Lake bison into WBNP.[196]

262. This information was used to support a key ECCC conclusion, that it is unlikely that the current risk is representative of historical conditions, and may reflect a recent shift in the range of the Ronald Lake herd. He also referred to results of the PVA conducted by MSES to support his arguments that the herd's viability is at risk without any critical evaluation of the PVA.[197] In his

[194] Transcript Vol 16, 3461 line 24 to 3462 line 11.

[195] CEAA Doc 489 at PDF 72.

[196] CEAA Doc 489 at PDF 73.

[197] CEAA Doc 489 at PDF 72.

testimony, Dr Komers stated that ECCC did not discuss his work with him before they used it to support their positions.[198]

263. Overall, Teck submits that the submission and testimony of Mr. Wiacek are both misleading and incorrect in terms of the Ronald Lake bison herd and should not be given any weight by the Panel.

B. Caribou

264. During the course of this hearing we have heard concerns regarding caribou. Specifically, the Sierra Club indicated in its direct evidence that "the proposed mine would disrupt critical habitat for endangered caribou"[199] and that the "project is completely contradictory to the well-being of the SARA woodland caribou in the region."[200]

265. In addition, Environment and Climate Change Canada has made submissions regarding caribou.

266. Mr. Chair, we must reiterate that the Project does not fall within currently designated woodland caribou ranges as defined by the Government of Alberta

[198] Transcript Vol 12, 2568 lines 8-20.

[199] Transcript Vol 7, 1435, lines 8-10.

[200] Transcript Vol 7, 1453, lines 7-9.

and the Government of Canada.[201] Considering this, the Project will not remove any habitat or displace any caribou from the Red Earth or Richardson herd ranges. However, recent GPS collar data has shown that caribou from the Red Earth range may have moved through the PDA. The GPS collar data does not indicate any movement between the Red Earth and Richardson herds.[202]

267. As caribou from the Red Earth herd were recorded in the Frontier Project PDA, potential Project effects **were** assessed within two study areas: a regional study area and a caribou range study area. The intent of the caribou range study area was to examine direct Project and cumulative effects on the caribou ranges. Based on our assessment, consequence ratings for the vegetation and wildlife RSA were high, and for the caribou range study area, consequence ratings were moderate as Project-related effects on caribou in the ranges are negligible.[203]

268. Finally, as we indicated in our direct examination, the range plans for the Red Earth, Richardson and West Side of the Athabasca River ranges have not yet been released by Alberta Environment and Parks. When these plans become

[201] Transcript Vol 1, 84, lines 20-23.

[202] Transcript Vol 1, 85, lines 1-5.

[203]

available, Teck, in collaboration with regulators and Indigenous communities, will assess their recommendations and determine whether (or to what extent) they are appropriate to include in the Project's mitigation and monitoring plans and as part of Teck's adaptive management process.[204]

269. In addition, Mr. Chair, Teck reminds the Panel that the ACFN-Teck Joint Recommendations contain mitigation and management commitments with respect to caribou.[205]

270. Teck submits that imposing conditions with respect to caribou and their range would result in an inefficient duplication of processes. Therefore, Teck submits that no conditions ought to be imposed on the Frontier Project regarding caribou habitat or range.

C. Whooping Crane

271. I'd like to now spend some time on whooping crane.

272. A number of interveners raised points regarding potential Project effects on Whooping Crane. Specifically, the loss of stopover habitat and the potential to be exposed to contaminants during migration were identified.

[204] Transcript Vol 1, 85 line 20 to 86 line 11.

[205] CEAA Doc 571, section 2.

273. Teck submits that the mortality risk due to the Project and cumulative oil sands development is not expected to result in a change in the abundance of the Whooping Crane population.

274. Teck acknowledges that the Project may result in changes to stopover habitat distribution during migration. However, Teck is of the view that overall, the sustainability of the regional Whooping Crane population and the breeding population of Wood Buffalo National Park will not be impacted.[206]

275. Parks Canada Agency submitted that the effects to certain desired outcomes of the whooping crane are likely to be significant because:

(a) The small population size and standing as the only self-sustaining and remaining wild population correspond to Whooping Crane's vulnerability to a single mortality, however low the likelihood of that occurrence;

(b) Reclamation efforts to return stopover habitat to Whooping Crane will take a substantial amount of time; and

[206] CEAA Doc 293, Response to JRP IR 7 at PDF 110-112.

(c) The effects are taking place to a population that is at risk and reside in a national park and World Heritage Site.[207]

276. I'd like to address each of these points in turn.

277. Mr. Chairman, Parks Canada submits that one factor leading to likely significant adverse effects is the vulnerability to a single mortality, however low the likelihood of that occurrence. Parks Canada has essentially said "even one is too many".

278. First, Mr. Chairman, as was demonstrated during the hearing, Teck is of the view that the mortality risk due to the Project and cumulative oil sands development is not expected to result in a change in the abundance of the Whooping Crane population. This has not been challenged by any party.

279. In addition, Parks Canada's Strategic Environmental Assessment or SEA for the Wood Buffalo National Park concluded a positive future trend and potential future downlisting of the Whooping Crane from their current endangered status.[208]

[207] CEAA Doc 489 at PDF pages 428-429, PCA 047-048; Transcript Vol 16, 3412 line 7 to 3414 line 20.

[208] CEAA Doc 401 at PDF 101 and 103.

280. Teck would also like to remind the Panel that it has committed to implementing best-available bird deterrent technology for the Project, as outlined in its Waterfowl Protection Plan,[209] and Teck is committed to investigating and implementing, if possible, additional systems for deterring Whooping Cranes.[210]

281. Mr. Chairman, simply put, the risk posed to whooping crane abundance due to this Project and cumulative oilsands development has been overstated. This is perhaps most evident by the fact that from the very first oil sands development until now – the whooping crane population has been increasing.[211]

282. Second, Parks Canada has submitted that significant adverse effects are likely due to the timeline for reclamation and loss of stopover habitat.

283. Mr. Chairman, Teck acknowledges that some stopover habitat will be temporarily lost as a result of the Project.

284. However, the ECCC information on Whooping Crane from 2016 that was presented to the UNESCO reactive mission concludes that although all cranes

[209] CEAA Doc 293, Appendix 7.10.

[210] Transcript Vol 3, 543, lines 9-14.

[211] CEAA Doc 163, Vol 3, Section 11.7.4.13 at 11-295.

migrate over the oil sands region, few use the region as stopover and most stopovers are short in duration.[212] In addition, of those recorded landings and stopovers, there have only been several instances of birds near or adjacent to process-affected waterbodies, with no reported mortalities in the history of oil sands operations.[213]

285. Teck's footprint represents a small portion of the overall oilsands development footprint.

286. In addition, the reclamation timeline can hardly be characterized as "substantial". Rather, Teck's progressive reclamation will ensure that this minor loss of stopover habitat is restored as quickly as possible.

287. Finally, Mr. Chairman, this minor loss of stopover habitat pales in comparison to the loss of critical habitat for SARA listed species that Parks Canada has historically allowed in national parks and World Heritage Sites for projects.

288. As we have demonstrated with Whooping Crane, the objectives for the species are unlikely to be affected if the Frontier Project is approved.

[212] Transcript Vol 1, 82 line 22 to 83 line 2.

[213] CEAA Doc 504 at PDF 444.

289. During the hearing, the Canadian Parks and Wilderness Society referenced the Shell Jackpine Mine Expansion Joint Review Panel Report, wherein the JRP stated, and I quote:

> "Although the Panel notes that the number of bird landings tends to be low and the birds tend not to be species at risk, the Panel believes that any effect on species at risk would be significant."[214]

290. CPAWS submits that the JRP for this hearing ought to adopt the same approach.

291. With respect, Teck disagrees. Teck submits that, in addition to the argument advanced by Teck earlier with respect determinations of significance, the circumstances surrounding Whooping Crane are now materially different than what was before the JRP in the Shell Jackpine Mine Expansion hearing.

292. During the Shell JME hearing, the Panel was presented with evidence that there were then 66 breeding pairs and that 40 breeding pairs were required to maintain the whooping crane population.[215] Therefore, due to the small size

[214] Joint Review Panel Report, Shell Canada Energy Jackpine Mine Expansion Project, Application to Amend Approval 9756 (July 9, 2013) [Jackpine Report] at para 588.

[215] Jackpine Report at para 580.

of the Whooping Crane population, any mortality could have significant negative population-level consequences.[216]

293. In contrast, the Whooping Crane population currently exhibits a positive future trend and this occurred alongside oil sands development.[217] In addition, Dr. St. Clair has estimated the population size to be about 430 birds with about 100 breeding pairs.[218] Mr. Wiacek estimated the population size of breeding pairs to be in the 180s.[219] This is significantly improved from the 66 breeding pairs just six years ago. As such, Teck is in agreement that Whooping Crane management is one of the greatest success stories in wildlife conservation.[220]

294. Therefore, Teck is of the view that because the Whooping Crane population is no longer fragile, an effect to an individual ought not be used as the bar for significance as potential Project effects are not expected to threaten the sustainability of the Aransas Wood Buffalo Whooping Crane population, nor affect the population from reaching its recovery strategy goal and future down-listing from its current endangered status.

---

[216] Jackpine Report at para 588.

[217] CEAA Doc 401 at PDF 101 and 103.

[218] Transcript Vol 6, 1267 lines 12-22.

[219] Transcript Vol 16, 3442 lines 14-17.

[220] Transcript Vol 6, 1241 lines 21-25.

D. Migratory Waterfowl

295. Mr. Chair, I'd like to now address the concerns raised regarding migratory waterfowl.

296. Parks Canada identified a concern regarding migratory waterfowl and the potential for contact with tailings ponds resulting in mortality.

297. Teck's assessment acknowledges the risk of mortality for birds from tailings ponds. However, Teck notes that regional monitoring programs contributed to by oilsands producers including Teck, such as the Oil Sands Birds Monitoring Plan, show that the number of birds killed per year due to interactions with tailings ponds is small compared to other sources of mortality.[221]

298. Therefore, while the potential for bird fatalities is regrettably greater than zero, they are not predicted to have a measurable effect on the sustainability of bird populations including waterfowl and other waterbirds.

299. Rather, in stark contrast to the small number of bird fatalities reported annually as a result of oil sands development, tens of millions of waterfowl are harvested annually as a means of conservation and millions of shorebirds,

[221] Transcript Vol 1, 79, lines 6-12.

waterfowl and other water birds are killed annually due to cats and collisions with transmission lines.[222]

300. In addition, Teck is committed to implementing best-available bird deterrent technology. Further, Teck has agreed with Parks Canada's recommendation that, if approved, Teck should participate with the Oil Sands Birds Technical Committee.[223]

301. Mr. Chairman, ECCC expressed concerns with the level of conservatism of Teck's avian risk assessment, which is attachment 11 to Teck's September 12 submission.[224]

302. Mr. Chairman, let me begin by noting that Teck's assessment, which included a 30-day exposure scenario, was indeed deemed conservative and an unlikely situation to occur by ECCC.[225]

303. Where ECCC believes there is a lack of conservativism, however, is with respect to Teck's use of twelve (12) constituents of oil sands processed water

[222] Transcript Vol 1, 80, lines 2-24.

[223] CEAA Doc 504 at PDF 44.

[224] Transcript Vol 15, 3165, lines 14-22.

[225] Transcript Vol 15, 3167, lines 5-8.

and not certain other constituents that may be present in oil sands processed water.[226]

304. ECCC submitted that other notable toxic constituents present in oil sands processed water include naphthenic acids, polycyclic aromatic compounds, and salt and ions.[227]

305. As such, ECCC stated:

> To base ingestion exposure on only 12 metals and omitting other well-documented contaminants of potential concern that are toxic to wildlife and that are present in oil sands processed water is not deemed a conservative approach.[228]

306. When asked whether assessing these other constituents that could be present in oil sands processed water would have resulted in a more conservative assessment, Mr. Mundy of ECCC stated:

[226] Transcript Vol 15, 3167 lines 12-25.

[227] Transcript Vol 15, 3168 lines 1-5.

[228] Transcript Vol 15, 3168 lines 6-10.

> I think it was necessary to take those constituents into consideration. They make a bigger piece of the effluent puzzle, basically.[229]

307. When asked if Mr. Mundy was aware of any toxicological reference value for waterfowl for the constituents referenced, Mr. Mundy of ECCC stated:

> it's my understanding that there aren't any toxic reference values in the literature specific to those compounds.[230]

308. Mr. Chairman, Teck submits that not including an assessment of constituents for which toxicological reference values are unknown is not sufficient evidence to draw the conclusion that Teck was not conservative. Indeed, as acknowledged by ECCC, Teck's assessment was conservative in other regards.

309. Teck submits that it used the best available information in conducting its assessment and that monitoring of the potential effects of other constituents of OSPW is best addressed through on-going collaborative work under the

[229] Transcript Vol 17, 3509, lines 19-25.

[230] Transcript Vol 17, 3509, lines 3-8.

Lower Athabasca Region: Tailings Management Framework for Mineable Athabasca Oil Sands and regional initiatives such as JOSM.

310. Overall, Mr. Chair, Teck is confident that employing the best-available bird deterrent technology will effectively mitigate and minimize potential bird fatalities so that comparatively these numbers in the oil sands region remain small.

X. WATER

A. Water Quality

311. Now, on to water and water quality, Specifically, several parties expressed concerns regarding the quality of water in the Peace Athabasca Delta and the Athabasca River. This included Government of Canada, MCFN, ACFN, Keepers of the Athabasca, and the Trappers.

312. Several such parties suggested that water quality in the PAD and the Athabasca River was affected because they are unable to drink untreated water directly from the Athabasca River. However, the Government of Canada confirmed that Health Canada does not recommend drinking untreated water no matter where you are, even in places you might perceive to be pristine.[231]

[231] Transcript Vol 16, 3448, lines 1-8.

313. To reiterate the unchallenged conclusion in Teck's EIA,

> The Project, in combination with other oil sands developments, is predicted to have negligible effects on acute and chronic toxicity, and tainting potential concentrations in all receiving waters in the aquatics LSA and RSA. The Project, in combination with other oil sands developments, is predicted to have negligible effects on aquatic health in Ronald Lake, Redclay and Big Creeks and the Athabasca River. [232]

B. Water Quantity & Navigability

314. In terms of water quantity, several parties expressed concerns regarding the rate of water drawn from the Athabasca River. This included the Government of Canada, MCFN, ACFN, Keepers of the Athabasca, and the Trappers. In addition, several parties expressed concerns regarding the cumulative effects of oilsands development on the Athabasca River and PAD.

315. Teck acknowledges that for those who make use of the PAD, and for those who navigate down the Athabasca River, there are concerns regarding water quantity and Teck takes these concerns very seriously, as evidence by Teck's

[232] CEAA Doc 163, Project Update, Volume 3, page 7-2.

commitments regarding water intake and quantity management. We acknowledge that the Athabasca River and PAD waterways are critical to supporting Indigenous rights and access.

316. Teck's hydrology evidence, which was summarized by Mr. Speller is as follows:

> [T]he Project is predicted to result in negligible changes in the Athabasca River flow and water level. We predict mean seasonal flow changes in the Athabasca River due to the project's maximum water withdrawals will range from 0.3 per cent in summer to 1.56 per cent in winter. We predict the maximum flow depth change to be one centimetre at the most critical navigation point on the Athabasca River.
>
> To put this one centimetre in context, we predict water level in the Athabasca River can decrease by 90 centimetres or increase by 28 centimetres, depending on predicted potential climate change scenarios.

> These negligible changes in the Athabasca River flow are predicted to result in negligible changes to the hydrologic and water level conditions in the Peace Athabasca Delta.
>
> We predict the change in Lake Athabasca water level due to the project is also approximately one centimetre […]
>
> It is important to note that our predictions assume the project is taking water at its maximum water withdrawal rate of 4.2 metres cubed per second all year long and throughout the mine life.
>
> The actual project water withdrawal rates will be required to be less than this most of the time during the mine life to comply with the Surface Water Quantity Management Framework.[233]

317. In addition, Mr. Chair, with respect to the cumulative effects of oilsands development on the Athabasca River and the PAD, Teck submits that the Project in conjunction with other developments are not expected to reduce

[233] Transcript Vol 1, 88 line 3 to 89 line 9.

water levels in Lake Athabasca, restrict navigation or affect flooding of the Peace-Athabasca Delta.[234]

318. With respect to navigability in the river, it is important to take into account that dredging of the Athabasca River stopped 1996.[235] This is consistent with traditional knowledge.[236] Therefore, there is no evidence that water withdrawals from this Project will impact navigability. In addition, as discussed previously, Teck has worked with Indigenous communities to establish its approach water quantity management as evidenced in its Joint Recommendations and Submissions.

319. Communities have expressed general concern regarding water levels in the PAD, which is fed by both the Athabasca River and the Peace River. Impacts on the Peace River from developments that have been undertaken are not something that this Panel can address. And they are not in any way connected to the Frontier Project. Teck will note, however, that as indicated by Dr. Peters of ECCC with the Government of Canada, under natural conditions the natural flows from the Peace River were about 18,000 cubic metres per second, which is then reduced by about 3,000 or 4,000 cubic meter per second as a result of

[234] CEAA Doc 163, Project Update, Vol. 3 at 6-58.

[235] Transcript Vol 16, 3447, lines 2-4.

[236] Transcript Vol 10, 2139, lines 7-15.

hydro power development.[237] In addition, Dr. Peters confirmed that oilsands water withdrawals from the Athabasca River are in the range of four cubic metres per second.[238]

320. Put another way, Mr. Chair, any perceptible changes to water levels in the PAD resulting from human activity are largely related to activities on the Peace River as opposed to the Athabasca River.

321. Teck believes that its evidence is best with respect to potential Project-related effects. However, Teck would also like to remind the panel of the Joint Recommendations and Submission established between ACFN, MCFN and Teck that also provide critical measures to respond to these concerns. In addition, Mr. Chair, Teck's hydrology assessment has been unchallenged.

XI. HUMAN HEALTH

322. I'd like to now speak to concerns expressed regarding human health. We heard from Dr. O'Connor on behalf of Keepers of the Athabasca that there are concerns regarding an increased level of cancer risks and cancer clusters in

[237] Transcript Vol 17, 3620 line 10 to 3621 line 2.

[238] Transcript Vol 17, 3621 line 18 to 3622 line 11.

the region, and that these elevated rates of cancers may be attributable to the oil sands.[239]

323. Mr. Bart Koppe addressed these concerns in his direct evidence. He stated that,

> Teck completed a comprehensive human health risk assessment of its Frontier Project. The HHRA followed an approach that's consistent with guidance provided by regulatory agencies like Health Canada and the United States Environmental Protection Agency. The HHRA included a detailed assessment of cancer risks in the region, including the community of Fort Chipewyan. The findings of the HHRA indicate that the cancer risks associated with the project are negligible.[240]

324. Mr. Koppe also further confirmed that the updated Alberta Health Services report on cancer incidence in Fort Chipewyan was completed as scheduled, which includes data for the period between 1997-2016. This report is currently being shared with the community and that Alberta Health Services will be

[239] Transcript Vol 7, 1854 line 20 to 1868 line 18.

[240] Transcript Vol 1, 92 lines 9-18.

leaving it up to the community to decide whether the report will be shared more broadly.[241]

325. We also heard from Ms. Olsgard on behalf of MCFN. Ms. Olsgard conducted an assessment of the risk of increased cancer rates from inhalation and ingestion of carcinogenic PAHs and arsenic in air, water, soil, traditional plants and fish wildlife tissues. Ms. Olsgard's report concluded that all age classes, toddlers, children, youth, adults, and elders, are at risk of increased cancer rates.

326. Mr. Chair, as was evidenced in cross-examination of Ms. Olsgard, her report contains significant calculation errors.[242] Ms. Olsgard completely failed to validate the AERMOD model and explain how an extraordinarily high hazard quotient was achieved despite there being no exceedances of any guidelines.[243] In addition, Ms. Olsgard relied upon the AERMOD model for distances of 50 kilometres to beyond 200 kilometres; all distances that exceed the limitations of the model.[244] Ms. Olsgard not only failed to point to any authority for its use beyond 50 kilometres, Ms. Olsgard actually agreed that

[241] Transcript Vol 1, 92 line 23 to 93 line 9.

[242] Transcript Vol 12, 2555 line 13 to 2557 line 23.

[243] Trasncript Vol 12, 2558 line 1 to 2565 line 4.

[244] Transcript Vol 12, 2540 line 8 to 2541 line 9.

there is no regulatory authority in North America that says to use the AERMOD model at distances beyond 50 kilometres.[245]

327. Mr. Chairman, Teck submits that Ms. Olsgard's report should be given no weight whatsoever.

A. Lead

328. I'd like to now spend a few minutes on lead. Mr. Chairman, Health Canada's Recommendation 4.4-2 seeks to have Teck, and I quote:

> Monitor for changes in lead concentrations in environmental media for the duration of the project. Environmental media include but are not limited to: air, surface soils, water and sediment. If lead concentrations in environmental media are increasing, country foods should also be analyzed to re-assess the potential risk to human health.[246]

329. When asked whether Health Canada agrees that the estimated incremental changes to dietary lead exposure in blood levels due to project activities are

[245] Transcript Vol 12, 2542 line 5 to 2547 line 12; Transcript Vol 12, 2547, lines 3-10.

[246] CEAA Doc 489 at PDF 341, HC page 016.

unlikely to pose an unacceptable risk to human health – Mr. Pelletier, on behalf of Health Canada, agreed.[247]

330. When asked whether Health Canada was of the view that blood lead levels based on existing – meaning background – dietary lead exposure estimates and based on dietary exposure estimates, including project-related activities, were expected to be within the range of those reported for the general population, Mr. Pelletier, on behalf of Health Canada, said "yes, we do."[248]

331. When asked whether Health Canada was of the view that the population in the Athabasca region or oil sands region generally has higher blood lead levels for children or adults than elsewhere, Mr. Pelletier, on behalf of Health Canada, said "no, we didn't indicate that."[249]

332. Finally, Mr. Chairman, when asked whether it would be appropriate for Teck to take ownership of environmental media monitoring with respect to blood lead levels or whether it should be incorporated into current regional monitoring efforts, Mr. Pelletier, on behalf of Health Canada, stated:

[247] Transcript Vol 17, 3497, lines 14-24.

[248] Transcript Vol 17, 3498, lines 8-15.

[249] Transcript Vol 17, 3506, lines 17-23.

> […] as long as what we are recommending is covered at some point we are satisfied with what would be happening[250]

333. To which Ms. LaForest added:

> […] our concern is that the monitoring be done and not necessarily – we are not privy – we don't necessarily know who is the best position [*sic*] to do that, but just the concern for the human health is that it be done.[251]

334. Mr. Chair, Teck also submits that it has serious concerns regarding any responsibility, as a private corporation, for the collection of health information of the region's residents as it would invariably raise significant privacy concerns.

335. Sir, Teck provided independent lines of evidence from researchers at the ultra-trace metal laboratory at the University of Alberta that show that lead concentrations are low in the Athabasca Oil Sands Region, and in particular

[250] Transcript Vol 17, 3576, lines 12-13.

[251] Transcript Vol 17, 3576, lines 17-21.

"extremely low" in the Athabasca River. These studies apply to several media such as water, snow, dust and moss.[252]

336. To summarize with respect to lead, Health Canada agreed that the Frontier Project is not expected to pose an unacceptable risk to human health and that blood lead levels in the Athabasca region are expected to remain within the range of those reported for the general Canadian population. Therefore, Teck does not agree with Health Canada's Recommendation 4.4-2 that Teck be required to monitor for changes in lead concentrations in environmental media for the duration of the Project. If deemed necessary, such monitoring activities are better addressed through regional initiatives like JOSM.

XII. RECLAMATION AND BIODIVERSITY

337. I would now like to move on to another area that has been raised at this hearing, and that is reclamation and biodiversity.

338. In terms of Teck's reclamation plan, it has been discussed at some length at this hearing. I think what is most important to note is that Teck is currently following reclamation best practices as recommended by Alberta Environment. Teck is also taking many other steps regarding biodiversity,

[252] CEAA Doc 651.

including implementing its own voluntary vision of Net Positive Impact or NPI.

339. Mr. Simon Dyer, on behalf of OSEC proposed an offset ratio of 4:1 directly into the project approval.[253] This value however is arbitrary and has no basis in actual mitigation efficacy.

340. Sir, it is premature to begin the design of any offset. However, Teck recognizes that the Panel may decide that additional mitigation measures are required, including biodiversity offsets. Teck is willing to pursue biodiversity offsets for residual environmental effects; however, it is important to recognize that Teck is examining this voluntarily in the absence of clear regulatory guidance, process and precedent. At this time, Teck is able to commit to:

(a) Completing the biodiversity management planning process to identify biodiversity elements to be considered for offsetting residual Project effects, understanding that the biodiversity management plan can only provide context for negotiation of a Conservation Agreement because there are real and practical limitations to realizing meaningful biodiversity offsets in Alberta.

[253] Transcript Vol 6, 1322 line 22 to 1323 line 4.

(b) Engaging with regulators, Indigenous communities and stakeholders during the biodiversity management planning process and during ongoing work being completed to understand and define how biodiversity offsets might be realized in Alberta.

(c) Negotiating a Conservation Agreement with ECCC that includes input from the AER and AEP and that allows Teck to draw upon the BSA for biodiversity offsets should the Panel determine these to be required for the Project.

(d) Providing routine reports to ECCC, AER and AEP after the Project is operating that summarizes progress made on the ability to realize meaningful biodiversity offsets in Alberta and Teck's progress towards achieving its voluntary vision of having a NPI on biodiversity.[254]

A. MFSP

341. I would like to now discuss the Mine Financial Security Program. During the proceeding, a number of interveners expressed concerns regarding environmental liability issues. Specifically, OSEC questioned how Teck intended to meet its obligations under the Mine Financial Security Program or MFSP when security against project resource or other Alberta resource is

[254] Teck Response to JRP IR Package 7, Appendix 7.15 at PDF29.

not a form of security permitted under the *Conservation and Reclamation Regulation*.

342. Mr. Chairman, Panel, Teck submits that this is incorrect and security can be posted against Frontier resource.[255] In addition, the Government of Alberta has established a regulatory regime for reclamation under the MFSP and Teck is fully committed to complying with the MFSP.

343. Ms. McNeill, on behalf of OSEC, stated that the MFSP does not adequately secure mines' closure and reclamation costs due to, among other things, the program's asset to liability approach.[256]

344. OSEC consequently requested that the Panel require Teck to post full security as a binding condition of any forthcoming approval for the Frontier Project.[257]

345. As indicated in the direct evidence of Ms. McNeill and Ms. Lothian and as confirmed upon cross-examination, Ms. McNeill and Ms. Lothian represent the Pembina Institute on a number of multi-stakeholder working groups that are hosted by the Government of Alberta.[258]

[255] Teck Response to JRP IR Package 5 at PDF 57.

[256] Transcript Vol 6, 1313, lines 3-15; see also Transcript Vol 6, 1310 line 8 to 1313 line 2.

[257] Transcript Vol 6, 1314, lines 3-6.

[258] Transcript Vol 6, 1295, lines 2-19; Transcript Vol 6, 1300, lines 5-22.

346. When asked whether it would be fair to say the Government of Alberta is informed of Ms. McNeill and Ms. Lothian's concerns regarding the MFSP, Ms. McNeill responded "Indeed they are."[259]

347. Mr. Chairman, Teck demonstrated through cross-examination by interveners and the Secretariat that it intends to comply with the MFSP. The content of the MFSP and its efficacy is not properly the subject of this proceeding.

348. The Government of Alberta is informed of the Pembina Institute's concerns regarding the efficacy of the MFSP and should they choose to revise the MFSP – Teck intends on upholding its commitment to comply.

349. As such, Teck submits that requiring Teck to post full-security would be discriminatory, would trench on the authority of the Government of Alberta, and ought not be required of Teck.

350. Mr. Chairman, Teck unequivocally stated that "should the Project be approved and built and operated, in the very unlikely event that the cash flow from Frontier wasn't sufficient to be able to fund the reclamation activities […] the larger Teck, all of its operations, all of its cash flow would be an extra measure of security"[260]

[259] Transcript Vol 6, 1327, line 13.

[260] Transcript Vol 2, 308 line 24 to 309 line 5.

351. When asked whether Teck will follow the MFSP Standard and Guide through all phases of the Project, including construction, even before it's eligible for a deemed netback, Teck was clear in stating "Absolutely, Teck will comply with the Mine Financial Security Program. Absolutely."[261]

352. Mr. Chairman, Counsel for the Secretariat noted "Teck has been very clear and forthright that they will comply with that security program."[262]

353. Therefore, Mr. Chairman, Panel – you, our stakeholders, Indigenous communities, Albertans and Canadians, can all rest assured that Teck will fulfill its reclamation responsibilities and leave the landscape with a net positive impact. Teck is a responsible developer, with a 100 year history, and over 70 awards for its reclamation efforts – Teck *will* do the right thing.

B. Tailings Management Plan

354. Turning now to the Tailings Management Plan, while Teck was not explicitly challenged on our plan, Teck would like to highlight some key points for the Panel's consideration.

355. Panel, Teck's updated Tailings Management Plan for the Project aligns with the recently updated *Tailings Management Framework* or TMF and AER

[261] Transcript Vol 4, 916 line 24 to 917 line 2.

[262] Transcript Vol 4, 916, lines 11-13.

Directive 085. Teck's tailings plan is robust and draws from industry experience to ensure best practices are in place for Frontier. Teck's Tailings Management Plan is necessarily tailored to site specific conditions which include a higher fines ore and limited construction material.

356. Teck's Tailings Management Plan is operationally robust because the fluid tailings treatment process is decoupled from bitumen recovery process to reduce risk of off-spec tailings performance.

357. Teck's Tailings Management Plan is technically robust because it aligns with COSIA and Syncrude learnings for implementation of centrifuges; and it is environmentally sound because soft treated tailings are deposited in-pit, below grade without any active tailings dams in closure landscapes.

358. Teck's fluid tailings volume profile is the key regulatory instrument required by *Directive 085*. The Project's projected fluid tailings inventories are significantly below *Directive 085*'s requirements at all relevant stages including early production, operation and post end of mine life.

359. Mr. Chairman, Panel, Teck's plan to manage tailings involves using the process of centrifuging fine fluid tailings in order to create in-pit centrifuge cake deposits. Centrifuging fine fluid tailings has been widely used in the mining and oil industry for decades, and has been commercially proven where

for example, Syncrude in 2015 and CNRL's Jackpine Mine have implemented centrifuge technology in their own operations.[263]

360. A key advantage of the centrifuge technology is that it allows proportional response to any observed performance issues. Mitigations include adjusting flocculation and/or coagulant dosage; adding more centrifuges; adjusting sand cap thickness; and several other measures.[264]

361. Moreover, through its membership and participation in COSIA, Teck will have access to further studies and learnings regarding the use of centrifuges for treating fluid tailings for roughly 20 years prior to when Teck will begin implementing this technology in 2038 at Frontier. Teck will also have 9 years of experience operating the Project's centrifuge system on a small scale before transitioning to large scale operations.

362. Panel, Teck is confident that its current tailings management plans meets industry best practices and complies with Directive 085, and Teck will ensure that any new developments either through COSIA or Teck's own operations are diligently assessed as Teck strives for continuous improvement.

XIII. INDIGENOUS COMMUNITIES

[263] Transcript Vol 3, 596 line 20 to 597 line 8; Transcript Vol 3, 624 line 25 to 625 line 7.

[264] Teck Response to JRP IR Package 1 at 1-14.

A. MCFN AND ACFN JOINT RECOMMENDATIONS

363. Before I conclude, I would like to address the ACFN and MCFN Joint Recommendations and Submission. As discussed throughout these proceedings, Teck concluded 14 out of 14 agreements with affected Indigenous communities. These agreements are incredibly meaningful to Teck and the communities involved and Teck is very proud of having been able to achieve such level of collaboration with so many communities.

364. In terms of what these agreements mean to both Teck and the Indigenous communities, these agreements commit the Parties to collaborative partnerships and planning on critical environmental, Aboriginal rights, and socio-economic matters; they ensure that we are accountable to each other; and reinforce all parties' commitment to mutual respect, cooperation and transparency for the life of the Project and beyond. The cooperation and level of respect between Teck and the communities is made plenty evident by statements made by for example Elder Terry Marten, who said:

> "If Canada or Alberta need crash courses on how to work with people, they can ask Teck to do it."[265]

[265] Transcript Vol 11, 2251, lines 2-4.

365. In terms of what they mean to the communities specifically, they constitute significant funding of community initiatives to support activities within the community, commitments to ensure all Project-specific effects have been satisfactorily concluded by Teck and ensure the communities that Teck, true to its word, will continue to come back to the table and continue to work with the communities for the life of the Project and beyond.

366. In terms of what these agreements mean to Teck, they represent Teck's commitment to seeking free prior and informed consent. The Panel should see from these agreements that Teck has, in good faith, done everything it can to address the project-specific concerns that the communities have, and more importantly, that all concerns within Teck's control have been resolved to the communities' satisfaction.

367. I would like to speak about two agreements in particular – the agreements between MCFN and ACFN. As part of these agreements, Joint Submissions and Recommendations by MCFN, ACFN and Teck were submitted. For reference, the Teck-MCFN Joint Submission is CEAA Doc 497 Appendix 2, and the Teck-ACFN Joint Recommendations are CEAA Doc 571.

368. I will address some clarifications regarding the Joint Recommendations and Submission from ACFN and MCFN respectively.

369. But first, Mr. Chair, Teck wishes to be clear that should the Panel impose a condition on water withdrawal, Teck believes the Panel should rely solely on the language provided in the ACFN-Teck Joint Recommendations and MCFN-Teck Joint Submission. Notwithstanding Teck's water conservation and management commitments, as well as the substantive commitments made to both ACFN and MCFN, the Frontier Project would not be feasible if the river water intake was shutoff every time Aboriginal Extreme Flow or AXF was reached.

B. ACFN

370. Mr. Chair, I'd like to begin by speaking to Teck's Joint Recommendations with ACFN.

371. One of the major concerns for Teck and ACFN was water quantity associated with the Peace Athabasca River and the Project. Section 3 of the Teck-ACFN Joint Recommendations addressed the issue. These are important recommendations, so it is important that we take the time now to ensure we interpret them right.

372. Teck acknowledges ACFN continue to advocate for full adoption of Aboriginal Extreme Flow or AXF into the Surface Water Quantity Management Framework or SWQMF. However, discussions of technical

feasibility and trade-offs with respect to the size of the off-storage water facilities ultimately resulted in a different agreement between ACFN and Teck.

373. In Section 3.2.d.i of the Teck-ACFN Joint Recommendation addresses mitigative measures in relation to the Aboriginal Extreme Flow. In this section, Teck has agreed that should the Aboriginal Extreme Flow be reached, which is a rate of flow of 500 m^3/s, that Teck would do the following:

(a) Plan water withdrawals to avoid or minimize water intake, including where feasible stopping or reducing river water intake, when Aboriginal Extreme Flow conditions exist;

(b) Use the off-stream storage pond during low-flow periods;

(c) Fill up the off-stream storage pond during high-flow periods;

(d) Demonstrate continual improved performance on water intake by decreasing water consumption over the life of the Project; and

(e) Advise the ACFN and relevant Regulatory Authorities regarding Teck water withdrawal management actions.

374. Therefore, should the Joint Review Panel deem a specific condition necessary related to Aboriginal Extreme Flow, Teck submits that the language provided in the Teck-ACFN Joint Recommendations ought to be relied upon.

375. Mr. Chair, on another matter and as per Joint Recommendations 1.3 and 5.3, Teck supports government action to establish the BSA as it will benefit wildlife and migratory birds. However, Teck does not believe that it is necessary to mitigate Project-specific effects over and above what Teck has included in its assessment.

376. Overall, Teck has worked tirelessly to ensure that all of ACFN's concerns have been heard and addressed. Teck satisfied the ACFN that their concerns will be properly addressed. This is evidenced not only by the agreement, but Teck's reputation with the community. As stated by Chief Adam,

> "I want to be clear about one thing. We have a positive relationship with Teck. They were respectful and we chose to negotiate directly with them. We are not anti-development but development needs to be done right and we felt that Teck listened to us"[266]

[266] Transcript Vol 10, 2017, lines 1 – 6.

C. MCFN

377. Turning now to the MCFN-Teck Joint Submission, which again is CEAA Doc 497 at Appendix 2, I would like to draw out some points of importance for the Panel.

378. First, similar to the point raised with the ACFN-Teck Joint Recommendations regarding Aboriginal Extreme Flow, what was agreed upon between Teck and MCFN was that Teck would develop an:

> "operational plan for managing water withdrawals to minimize water intake during periods of low-flow in the Athabasca River, informed by the objective of avoiding or minimizing water withdrawals when water levels are below Indigenous Base Flow and including measures to achieve that objective."[267]

379. As recognized by Mr. Stuckless of the MCFN Panel 2, "there are other options" other than shutting off the water intake during low flows in order to deal with water quality and quantity mitigation.[268] To reiterate, Teck has not committed to halting the water intake in circumstances of Aboriginal Extreme

[267] CEAA Doc 497, Appendix 2, page 37.

[268] Transcript Vol 13, 2735, lines 7-14.

Flow, but has committed to many other measures to ensure water quantity in the Athabasca is preserved.

380. Second, related also to water, AER counsel asked MCFN about Condition number 5 regarding annual review of monitoring data in order to regularly update the hydrology and water quality mitigation monitoring plan. The text of this condition reads, and I quote:

> The proponent shall annually review monitoring data from, and update regularly, the Hydrology and Water Quality Mitigation, Monitoring and Adaptive Management Plans, in consultation with Indigenous groups, to incorporate any changes required or technically and economically feasible to decrease water intensity and Project effects on Indigenous navigability over time.[269]

381. Teck's commitment to annual review of the monitoring data is intended to facilitate Teck's commitment to adaptive management.

382. Third, there were some recommendations made by consultants for MCFN that were never agreed to by Teck. For example, Ms. Davidson's comments

[269] CEAA Doc 497 at PDF 40.

regarding reducing existing water quality thresholds to 75% of the Canadian drinking water standards[270] you will note is entirely missing from the MCFN-Teck Joint Recommendations. In addition, Panel, Teck is of the view that this recommendation is outside the scope of this process and is properly directed at government in its ongoing review of LARP. This recommendation should be given no weight as Ms. Davidson was not present at the negotiations and her statements completely fail to reflect the reality of MCFN and Teck's agreement. Simply put, Sir, anything not found within the MCFN-Teck Joint Recommendations is not agreed to.

383. Fourth, MCFN identified government actions related to the BSA to address their concerns that can be found in CEAA Registry Doc 497, Section E and Appendix 3. To be clear, Mr. Chair, Teck is not of the view that the BSA is required to mitigate Project-specific effects. However, Teck recognizes that establishing a stewardship area would offer additional protection to the Park and assist with maximizing community confidence in the PAD.

384. Finally, it appears that some clarification regarding discussions around a potential Oversight Committee would be helpful. Teck understands that

[270] Transcript Vol 13, 2733-2734.

MCFN is seeking the government to develop the Oversight Committee and Teck's understanding is in line with Ms. Lepine's statements, where she said:

> "These would be the things that they would be dealing with: aboriginal and treaty rights, good faith participation, dispute resolution and it would be the responsibility of each party to share their expertise within the forum."[271]

385. Teck remains supportive of MCFN's efforts with government to establish an Oversight Committee as a vehicle for MCFN and other Indigenous communities to become more involved in monitoring, contingent upon the committees avoiding duplication and building on efficiency.[272] Teck's support is also contingent on the Oversight Committee avoiding additional costs that may be incurred that are above and beyond those contemplated in its permit applications and agreements with Indigenous communities. Teck's support is also contingent on there being clear lines drawn when it comes to accountability and transparency that is required not only by Teck's permits, but that is also required under Teck's agreements with Indigenous communities. Finally, Mr. Chair, Teck's support is contingent on Teck's inclusion in the formation and operation of the Oversight Committee as the

[271] Transcript Vol 13, 2717, lines 16-21.

[272] Transcript Vol 1, 111 line 24 to line 112 19..

results of its monitoring could have material impacts on the management of the Project.

386. As such, Teck supports efficient committees, including the Oversight Committee, that do not duplicate efforts and that ensure appropriate authority and accountability.

387. This is a highly competitive business and in a time when efficiencies are required, to implement inefficient conditions would be a step back.

388. All that said, this agreement between Teck and MCFN has allowed us to strengthen our relationship, to work together, and as Councillor Waquan said, to build a meaningful partnership and relationship moving forward hand in hand and not one in front of another.[273] Teck treats its partnership with MCFN seriously and our agreement reflects this commitment.

XIV. THE TRAPPERS

389. I will now turn to discussing some of the issues raised by the Trappers. Before I begin, it should be noted by the Panel that Teck remains of the view that the Trappers are not an Indigenous community, and were therefore not required

[273] Transcript Vol 13, 2709, lines 21-25.

to be consulted with as such. However, Teck acknowledges the concerns they raise and would like to address them with that context in mind.

A. Spiritual Sites

390. The Trappers raised concerns regarding whether there were spiritual or culturally significant sites within the Project Disturbance Area. Mr. D. Shevolup stated that there are 15 to 30 burial sites located on RFMA 2346.[274] Mr. Chair, Teck wishes to remind the Panel that these potential burial sites on RFMA 2346 are not located on the PDA, but are located approximately 7 kilometres outside the PDA. As well, in asserting that there were two cemetery sites within the Frontier PDA, Mr. D. Shevolup relied on a document[275] published in 1996 that was specific to the Fort McKay First Nation.[276]

391. However, the Fort McKay First Nation did a project-specific Traditional Land Use study in 2011. This TLU did identify cultural and spiritual sites, and was included in Teck's Integrated Application.[277] The Trappers confirmed that

[274] Transcript Vol 14, 2936 line 20 to 2937 line 3.

[275] CEAA Doc 631.

[276] Transcript, Vol 14, 2960, lines 1-24.

[277] CEAA Doc 4, Volume 8 Appendix 6A.

they were unaware of this updated TLU study, as well as the fact that this information was already incorporated into the Project Application.[278]

392. The Fort McKay 2011 TLU study included a figure of traditional land use values including cultural and spiritual sites, which includes burial sites. The cultural/spiritual sites in the updated figure that was included in the Integrated Application shows the cultural and spiritual sites being located further west than in the study that the Trappers provided, and importantly, outside the main mine footprint.

393. Additionally, Teck specifically assessed the potential for the Project to affect cultural sites, including burial sites, in the Traditional Land Use assessment. For example, Teck specifically responded to Fort McKay First Nation burial sites in JRP IR Package 4, Appendix 4.2.[279] While this JRP response was specific to the Fort McKay First Nation, Teck completed a similar review and assessment for potential effects for any reported cultural sites for each of the Indigenous communities included in Teck's assessment. Teck continues to complete historic resource investigations for the Project and to date, no burials have been confirmed in the Project Disturbance Area.

[278] Transcript Vol 14, 2961 lines 2-21.

[279] CEAA Doc 291.

394. Therefore, while Teck recognizes the Trappers' concerns regarding burial sites, Teck has extensively considered the issue and has provided updated information throughout these proceedings that supersedes the information provided by the Trappers.

B. Consultation

395. Mr. Chuck Shevolup raised the concern that he had not received notification from Teck regarding the Project as a junior partner of RFMA 2346.[280] However, consistent with standard industry practice and as advised by the Alberta Trappers Association[281] it is only the RFMA holder (i.e., senior partner) who is to be notified. There is no direction that junior partners be notified as well.

396. Additionally, with regards to the Trappers' concerns regarding consultation, Mr. D. Shevolup confirmed that he had spoken to a Cam Batemen at UTS and Murray Hubscher from Boreal.[282] He further confirmed that he spoke with Cam Batemen "at least 10 times" over the years.[283] Teck notes that correspondence with representatives from UTS or Boreal constitutes

[280] Transcript Vol 14, 2912 line 21 to 2913 line 5.

[281] Alberta Trappers' Association, Tips for Industry and Trappers, online: < www.albertatrappers.com/tips-for-industry-trappers.html>.

[282] Transcript Vol 14, 2916, lines 20-24; Transcript Vol 14, 2917, lines 1-3; Transcript Vol 14, 2955, lines 7-10.

[283] Transcript Vol 14, 2956, lines 8-9.

correspondence with Teck as they were acting on behalf of Teck. As such, it is clear that Mr. D. Shevolup had regular contact with Teck and by extension, notification of the Project, throughout exploration and application phases.

XV. CONCLUSION

397. Mr. Chairman, I'd like to now conclude.

398. Teck submits that there is no credible evidence that this Project will have significant adverse environmental effects. The potential impacts of this project can and will be addressed by a responsible and committed corporation. The benefits of this Project to local Indigenous communities, Alberta and Canada are significant and the negative effects, most of which are regional and non-project specific issues, can all be managed with the initiatives that are already in place or that are underway and which Teck is committed to supporting.

399. Teck is a large, mature and responsible Canadian corporation, and a sustainable developer that has the wherewithal to carry out the Project from construction through to closure and reclamation in a manner that meets or exceeds all regulatory requirements.

400. Mr. Chair, as stated by Mr. McFadyen in his opening statement, Teck sees strong global demand for bitumen, a product essential to every day life.

401. Further, the benefits of the Frontier Project are very material. The Project will create 7,000 direct jobs during the construction phase and a further 2,500 jobs during mine life. The Project will also spur economic growth with the creation of new business development opportunities through procurement, contracting and service provision. In addition, Sir, the Frontier Project will contribute directly to government revenues at all levels in the amount of over $70 billion over mine life. This includes an estimated $12 billion in taxes to the federal government, some $55 billion to the province through royalties and taxes, and a further $3.5 billion to the region through property taxes.

402. We ask that you approve this project as the AER and as the CEAA Joint panel we ask that you recommend that this project is not likely to cause any significant adverse environmental effects that cannot be mitigated and that the Responsible Authority proceed with processing the authorization.

403. Mr. Chairman, Panel, Teck has put significant effort into developing a thoughtful application since 2008 that minimizes the environmental and social impacts of this project, and to engaging with all stakeholders and Indigenous communities in an open and honest manner.

404. Teck has dealt honestly and forthrightly with all parties. They have sought agreement and conciliation where possible, and have committed to work on those things they could not resolve. In addition, Panel, Teck cannot stress

enough that it has entered into agreements with 14 of 14 Indigenous communities that are most affected by the Project and they are not opposed to the Project.

405. Mr. Chairman, as a result of the collaborative efforts by Teck and its Indigenous partners, Teck has presented this Panel with joint conditions and recommendations. Teck believes that these joint conditions and recommendations fully address the concerns previously held by some Indigenous communities and also provide efficient and effective mitigation. Mr. Chairman, as you are well aware, this is a highly competitive industry and Teck must remain competitive in order to advance the Frontier Project. With this in mind, Teck reminds the Panel that the conditions imposed on the Frontier Project will have a material impact on whether Teck is able to advance the Frontier Project. Teck submits that imposing extraneous conditions for conditions-sake is inefficient and harms the competitiveness of the oilsands industry at a time when increased competitiveness is of critical importance.

406. Mr. Chairman, you and the other panel members can be confident that Teck's Frontier Project is in the public interest, and that Teck will continue to be a responsible Canadian developer, producer and operator.

407. Thank you for your time and attention over the last few months. If there are any questions I would be happy to respond.