

***Coal Conservation Act* Application Nos. 1844520, 1902073,
Environmental Protection and Enhancement Act Application No.
001-00403427, and *Water Act* Application Nos. 001-00403428,
001-00403429, 001-00403430, 001-00403431, *Public Lands Act*
Application Nos. MSL160757, MSL160758, LOC160841,
LOC160842, and LOC970943**

Joint Review Panel

Impact Assessment Agency of Canada Reference No. 80101

Final Argument

Of

Timberwolf Conservation Society and Mike Judd

January 8, 2021

INTRODUCTION

1. These are the combined written arguments of Timberwolf Conservation Society and Mike Judd (collectively hereafter “Timberwolf”) with respect to the Benga Mining Limited’s (hereafter “Benga”) proposed Grassy Mountain Coal Project (hereafter “the Proposed Mine”).
2. Timberwolf submits these arguments to the Joint Review Panel (hereafter “the Panel”) established between the Governments of Canada and Alberta for the purpose of conducting an environmental assessment of the Proposed Coal Mine in a manner that is consistent with the *Canadian Environmental Assessment Act 2012* (hereafter “CEAA 2012”) and the Alberta Energy Regulator (hereafter “the Proceeding”).
3. Timberwolf’s arguments rely on the entire record of the Proceeding.
4. Additionally, Timberwolf relies on relevant provincial and federal legislation, policy, agreements and treaties in support of its arguments.
5. Timberwolf respectfully submits that the preponderance of evidence submitted into the Record of the Proceeding strongly supports the conclusion that the Proposed Mine is not in the Public Interest.
6. Further, Timberwolf submits that with respect to the issue of the threatened Westslope Cutthroat Trout (here after “WCT”), if Benga were to construct the Proposed Mine as currently proposed it would be contrary to law.
7. Timberwolf requests that the Panel conclude that the Proposed Mine is not in the Public Interest and that the Panel recommend to the Minister that it not receive approval as per section 52 of CEAA 2012.
8. The balance of Timberwolf’s arguments and the evidentiary and legal basis for its conclusions that the Proposed Mine is not in the Public Interest and cannot be constructed without contravention of law is as follows.

STRUCTURE OF THE TIMBERWOLF FINAL ARGUMENT

9. Timberwolf stated at the outset of the Proceeding that in recognition of the need to conduct an efficient hearing that it would limit its submissions to issues relating to the *Species at Risk Act* (hereafter “SARA”), protected WCT, and related matters. Timberwolf’s argument will follow a similar structure¹.
10. Further, Timberwolf will argue that the policy and legislative context which ought to govern the consideration of Benga’s the Proposed Coal Mine, including SARA, does not support any other conclusion than the Proposed Coal Mine is not in the Public Interest and/or is contrary to law.

ONUS

11. Timberwolf submits that the onus to demonstrate the Proposed Mining Project is in the Public Interest clearly falls entirely on Benga. Mr. Houston, on behalf of Benga, confirmed that Benga accepts the onus to prove the Proposed Mine is in the Public Interest.²
12. Timberwolf respectfully submits, as argued below, that Benga has failed to discharge its responsibility to prove, based on the preponderance of the evidence, that its Proposed Mine is in the Public Interest.

SPECIES AT RISK ACT³

13. SARA was promulgated in 2002 by the Government of Canada in partial fulfilment of Canada’s legal obligation under the Convention on Biological Diversity.

¹ CIAR #740 at 162 – 165.

² CIAR #771 at Ln 10 – 16, Page 934

³ Much of this section is borrowed, with permission, from Sean Fluker and Drew Yewchuk “Comments on the Proposed Species at Risk Act Permitting Policy” (18 November, 2016), online: ABlawg, http://ablawg.ca/wp-content/uploads/2016/11/Blog_SF_SARA_Nov2016.pdf

14. Timberwolf submits that understanding SARA and its related policies in the context of the Proposed Mine and specifically in the context of the threatened WCT that will be affected by the Proposed Mine is critical to determining if the Proposed Mine is in the Public Interest.

15. Section 6 of SARA states the Act's purposes as:

"The purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened."⁴

16. The WCT (Alberta population) is listed as a threatened species in Schedule I of SARA and therefore entitled to all the protection SARA affords.

17. Section 32(1) of SARA states the general prohibitions of the Acts as:

"No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species."⁵

18. Section 33 of SARA states that:

"No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada."

19. Timberwolf submits that the evidence is unequivocal in this Proceeding that Benga's Proposed Mine will result in the killing, harming, harassing, capture or taking of WCT or the damage or destruction of the "residence" of WCT, a species that is listed as threatened under SARA.

⁴ Species at Risk Act, Section 6

⁵ Species at Risk Act, Section 32(1)

20. Section 58(1) of SARA states with respect to the destruction of critical habitat that:

“Subject to this section, no person shall destroy any part of the critical habitat of any listed endangered species or of any listed threatened species — or of any listed extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada — if

(a) the critical habitat is on federal land, in the exclusive economic zone of Canada or on the continental shelf of Canada;

(b) the listed species is an aquatic species...”

21. Timberwolf submits that it is uncontested fact that the WCT is an aquatic species and therefore subject to the provisions and protection of section 58(1) of SARA.

22. Section 73(1) of SARA defines the discretionary powers of the competent minister as:

“The competent minister may enter into an agreement with a person, or issue a permit to a person, authorizing the person to engage in an activity affecting a listed wildlife species, any part of its critical habitat or the residences of its individuals.”

23. Section 73(2) of SARA defines the limitations on the discretionary powers of the competent minister as:

“The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

(a) the activity is scientific research relating to the conservation of the species and conducted by qualified persons;

(b) the activity benefits the species or is required to enhance its chance of survival in the wild; or

(c) affecting the species is incidental to the carrying out of the activity.

24. Timberwolf submits that with respect to Benga’s intention to apply for a section 73 SARA permit, section 73(2)(c) is the relevant and applicable section. Specifically Benga argues that its Proposed Mine is incidental to the activity, the construction and

operation of a coal mine. Timberwolf disagrees with Benga's interpretation of section 73(2)(c) of SARA.

25. Timberwolf submits that the interpretation of Section 73(2)(c), specifically the phrase "...incidental to..." is a contentious matter in these Proceedings and a key factor in determining if the Proposed Mine is in the Public Interest.
26. Timberwolf is of the view that the interpretation of section 73(2)(c) included in the Policy and adopted by DFO and Benga in these proceedings is inconsistent with SARA and thus unlawful in that it purports to allow for the authorization of industrial development and other commercial activity that will harm listed endangered or threatened species and their critical habitat.
27. Timberwolf submits that section 6 of SARA provides a guiding principle in the interpretation of SARA. As indicated in paragraph 15 above - the overall purpose of SARA is to both protect listed endangered or threatened species and facilitate their recovery.
28. Any interpretation or application of SARA must be consistent with both of these objectives of protection and recovery. Timberwolf submits that it follows that any interpretation or application of SARA which serves to impair either protection or recovery of listed endangered or threatened species is inconsistent with SARA and accordingly unlawful.
29. Timberwolf submits that species listed under SARA because the species are on the verge of becoming extinct or extirpated in the Alberta native range. This is the case with respect to the WCT in general, and specifically with respect to the WCT Gold Creek sub-population. Protection afforded to species listed under SARA include the obligation to develop a recovery strategy and an action plan, as well as legislated prohibitions against harming individual members of such species or destroying any part of its critical habitat. Critical habitat is defined in SARA as the habitat that is

necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species. Any interpretation or application of SARA which allows for the destruction of critical habitat is thereby necessarily impairing the survival or recovery of a listed species and is thus inconsistent with the purpose of SARA and unlawful.

30. Timberwolf notes that the Policy remains as a draft and the matter of the statutory interpretation of Section 73 of SARA has not yet been subject to an explicit judicial review. However, the Federal Court of Appeal references section 73 of SARA in its *Georgia Strait Alliance v Canada*, 2012 FCA 40 decision. The language chosen by the FCC in *Georgia Strait*, strongly suggests these permitting provisions of SARA are to be given a restrictive interpretation to allow for activity that harms listed species under SARA in very limited circumstances. Specifically the FCC stated:

“ . . . SARA restricts the authority of a "competent minister" — including the appellant Minister in this case — from entering into an agreement, issuing a permit or licence or making an order under another Act of Parliament — such as the Fisheries Act— authorizing a person to engage in an activity "affecting" the critical habitat of a listed wildlife species unless (a) the activity is scientific research relating to the conservation of the species and conducted by qualified persons; (b) the activity benefits the species or is required to enhance its survival; or (c) affecting the species is incidental to the carrying out of the activity.

Even in such limited circumstances, the agreement may be entered into, or the permit issued, . . . only if the competent minister is of the opinion that all reasonable alternatives have been considered and the best solution has been adopted, measures have been taken to minimize the impact of the activity, and the activity will not jeopardize the survival or recovery of the species.”

31. Timberwolf is aware that section 73 permits have been issued to authorize activities on the justification that effects on a listed species will be incidental as per section 73(2)(c). However, the overwhelming majority of such permits Timberwolf and, notably, that Benga has reviewed concerned the authorization of incidental harm, and those referenced by Benga over the course of these Proceedings, caused by infrastructure maintenance on physical works such as bridges or roads. Timberwolf submits it is contrary to the purpose of SARA and thus unlawful to read section 73(2)(c) in a manner that allows the section to justify industrial development more generally. In particular, Timberwolf submits its unlawful to read section 73(2)(c) in a

manner that justifies harm to a listed endangered or threatened species or its critical habitat in the context of, for example, authorizing the Proposed Mine.

32. There are technical concerns with issuing permits using section 73(3)(c) as a justification. In particular, it is scientifically difficult and often impossible to determine quantitatively before the fact what the actual incidental effects, and their magnitude, of an activity will be on a listed species. This is especially true with incidental effects which, because they are not deliberate (as the interpretation of “incidental” contemplates), are inherently unexpected. It is illogical that all unexpected events could ever be anticipated and properly assessed for authorizing harm to species and habitat which is already threatened or on the verge of extinction. In practice, quantitative evaluations of risk and estimation error are seldom made.
33. The practical consequence of this problem is that mistakes in risk assessments are likely, and will have disproportionately large consequences for survival of populations that are already at risk. For these reasons the precautionary principle should be the default, and no permit should be issued under the policy’s proposed interpretation of “incidental” unless the activity is minor – as might be the case with routine maintenance or repair of existing physical works, but not with respect to Benga’s Proposed Mine.
34. Furthermore, there are no quantitative standards for guiding the competent minister’s decisions under this proposed policy. In light of the fact that listed species have already been identified scientifically and legally as already at serious risk of extirpation or extinction, how much additional risk is tolerable? To what extent can these species sustain any further harm if SARA is to meet its objective?
35. The Government of Canada’s proposed interpretation of “incidental” would result in banning certain relatively harmless activities (the examples given included catch-and-release fishing with zero mortality), while permitting largescale industrial developments, many of which have inherently high probability of destruction of critical habitat, and even direct mortalities of nominally protected species, however

incidentally. Timberwolf submits this is an absurd reading of section 73(2)(c). It is plain that successive permitting of industrial development projects under the proposed interpretation of “incidental” would inevitably lead to further decline and ultimately extirpation or extinction of listed species under SARA.

36. Timberwolf submits that the only interpretation of the word “incidental” consistent with the purposes of SARA is “minor” or “inconsequential.”
37. With respect to offsets, Timberwolf submits that consideration of biodiversity offsets in a section 73(3)(c) determination is fundamentally inconsistent with the meaning of critical habitat and the purpose of SARA to protect listed endangered or threatened species and their critical habitat.
38. Research on biodiversity offsets has found that such offsets have been largely inconsistent in meeting conservation objectives, finding that while compensation and no net loss are worthy goals, and bartering biodiversity might appear more promising than simple and weakly enforced prohibitions, policies that enable biodiversity trading may perversely yield worse biodiversity outcomes⁶.
39. Responding to questioning by Timberwolf, DFO expert witness explained that historical offsets had relatively low success rates but that the more restrictive onus now imposed by the SARA for WCT require a very high level of certainty that any approved offsetting will be successful.⁷
40. Timberwolf submits that in practice biodiversity offsets are likely to be institutionalized as any other mitigation measure - merely costs of doing business as usual. The so-called mitigation hierarchy of only considering biodiversity offsets after all possible harm avoidance looks good on paper but in fact, it has been show over and over again

⁶ See the report of David Mayhood, CIRA #558

⁷ CIRA #891:4680:26 to 4683:24

to be largely ineffective and unreliable in practice⁸. The experiments have been done; the approach has failed. SARA is not the place to experiment with this sort of 'pie-in-the-sky' policy.

41. Timberwolf reiterates that the proposal for consideration of biodiversity offsets in a section 73(3)(c) determination is fundamentally inconsistent with the meaning of critical habitat and the purpose of SARA to protect listed endangered or threatened species and their critical habitat, and is therefore unlawful. In further support of this position, we provide the following.
42. Critical habitat is defined in SARA as "the habitat necessary for the survival or recovery of a listed wildlife species." Critical habitat is the absolute minimum requirement and typically does not include the entire habitat range and needs for the species. By definition critical habitat is scarce and unique, and is thus not a fungible commodity or replaceable. The concept of offsets requires the subject of the offset to be fungible and replaceable and have functional equivalency. Biodiversity offsets are incapable of serving the role proposed for by the Government of Canada and Benga.
43. Actual implementation rates of biodiversity offsets are poor. In Canada, the Department of Fisheries and Oceans (DFO) found that only 37% of compensation projects achieved the conservation policy of no net loss of habitat productivity under the Fisheries Act.^{9,10}
44. Section 73(3) of SARA further limits the discretionary powers of the competent minister as:

The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

⁸ See the report of David Mayhood, CIRA #558; also the report (CIRA #??) and detailed oral testimony of Mr. Lorne Fitch regarding the ineffectiveness and unreliability of 100s of artificial habitat structures in southern East Slopes of Alberta.

⁹ See the report of David Mayhood, CIRA #558

¹⁰ These compensation projects were under the Fisheries Act and not SARA

- (a) all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted;
- (b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and
- (c) the activity will not jeopardize the survival or recovery of the species.

45. Timberwolf submits that given the poor record of offsets outlined by testimony of Mr. David Mayhood,¹¹ and the high failure rate of artificial habitat enhancements cited by Mayhood & described at length for the Southern E Slopes by Fitch, the Proposed Mine and the offsets proposed by Benga clearly jeopardize the survival and recovery of the Gold Creek WCT population. The importance of this population to the recovery of WCT in Alberta is also well supported by the testimony of Dr. John Post, and by Mr. Mayhood's report & oral testimony. The loss of the Gold Creek WCT population would seriously jeopardize WCT recovery in Alberta.

46. Lastly, Section 79(2) of SARA defines the SARA obligations of a person conducting a project environmental assessment review under the provisions of the CEAA 2012 as:

“The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them. The measures must be taken in a way that is consistent with any applicable recovery strategy and action plans.” (Emphasis Added)

47. Section 79(3) of SARA defines a person in 79(2) as:

“person includes an association, an organization, a federal authority as defined in section 2 of the Impact Assessment Act, and any body that is set out in Schedule 4 to that Act.”

¹¹ See the report of David Mayhood, CIRA #558

48. Timberwolf submits for the purposes of the Joint Review of the proposed Benga Grassy Mountain Coal Project, the Joint Review Panel, or the Panel, is a person as defined in Section 79(3) of SARA.
49. Timberwolf further submits that notwithstanding any other requirement of SARA and specifically the requirements of Section 73 of SARA, that the Panel must identify the adverse effects of Benga's Proposed Mine on the SARA listed WCT and its critical habitat and if the Proposed Mine is approved, constructed and operated, the Panel must ensure that measures are taken to avoid or lessen those effects.
50. In the context of the Benga Proposed Mine and the matters covered in the Public Hearing portion of this proceeding, Timberwolf interprets the phrase "that measures are taken..." to mean mitigation or offsets under Section 73 of SARA .
51. The final sentence of Section 79(2) of SARA creates a mandatory duty, "...measures must be taken...", in a way that is consistent with the Westslope Cutthroat Trout Recovery Strategy and Action Plan for the Westslope Cutthroat Trout (*Oncorhynchus clarkii lewisi*) Alberta Population (also known as Saskatchewan-Nelson River Populations) in Canada.
52. In the context the Benga Proposed Mine, Timberwolf submits that Section 79(2) should be read to mean any mitigation or offsets measures that Benga proposes, or mitigation or offsets measures that the Panel imposes on Benga, must be consistent with the WCT Recovery Strategy.
53. To put the preceding into context, the WCT Recovery Strategy states the population and distribution objectives for the recovery strategy - action plan as:

"Protect and maintain the existing distribution of = 0.99 genetically pure populations of Westslope Cutthroat Trout, and re-establish genetically pure populations to self-sustaining levels, within the species' original distribution in the Saskatchewan – Nelson rivers watershed in Alberta.

54. Therefore, Timberwolf submits that notwithstanding any of its previous arguments with respect to the legality of Benga applying for and receiving a section 73 permit, the Panel must, according to Section 79(3) ensure that, if it decides to recommend that the Proposed Mine be approved, any conditions, including proposed offsets and mitigation, are consistent with the WCT Recovery Strategy goal of protecting and maintaining the existing distribution of genetically pure WCT, which includes those found in Gold Creek, and re-establish genetically pure populations to self-sustaining levels, within the species' original distribution, which includes Blairmore Creek.

55. Timberwolf respectfully submits any decision by the Panel to recommend approval of the Benga Proposed Mine that is not consistent with the WCT Recovery Strategy would be unlawful.

CONDITIONS PRECEDENT FOR FINAL APPROVAL OF THE BENGA PROJECT

56. Mr. Houston confirmed that Gold Creek contains WCT that are listed and protected under SARA and that Benga was aware of this fact.

57. Timberwolf submits that the evidence is unequivocal in this Proceeding that Benga's Proposed Mine will result in the destruction or harm to and/or the critical habitat of the SARA protected WCT population in Gold Creek.¹²

58. Timberwolf further submits that Benga would be committing an offence under SARA to destroy fish, such as the WCT in Gold creek, or fish habitat that is protected under SARA, unless Benga successfully applies for permit/authorizations as per sections 73 and 74 of SARA.

¹² CIAR #793 Page 1812, Ln 2

59. Mr. Houston, in response to questioning by Mr. Sawyer, confirmed that Benga understands that it will require either a section 73 or 74 permit so that the Proposed Mine can be legally built and operated.¹³
60. Mr. Houston also confirmed that Benga has not applied to the Government of Canada for required section 73 permits with respect to the construction and operation of the Proposed Mine.¹⁴
61. Timberwolf does not agree with Benga when it argues that the current SARA status of the WCT does not mean that the Project cannot proceed relying on the provisions of section 73 of SARA to permit activities, such as the Proposed Mine, that would otherwise be illegal.¹⁵
62. Timberwolf, as described above in paragraphs 13 through 44, believes that the DFO interpretation of SARA, and specifically sections 74 and 74, are not consistent with the purpose and intention of SARA and are therefore unlawful.

TIMBERWOLF EXPERT WITNESS

Mr. Dave Mayhood

63. Mr. Mayhood's evidence is that the "protected" population of WCT in Gold Creek is almost all that is left of the large metapopulation that once existed in the Crowsnest River drainage. It holds rare genes, and it is locally-adapted to the harsh conditions of its home watershed.
64. Mr. Mayhood indicated that while all remaining populations are needed, stocks such as found in Gold Creek are particularly valuable to retain as a source of genetic variation to help salvage the many other tiny, remnant native populations. These are

¹³ CIAR #866 Page 3836, Ln 6-10

¹⁴ CIAR #866 Page 3836, Ln 12-24

¹⁵ Benga Final Argument, PDF page 97: Para 373

genetically depauperate, isolated and headed rapidly toward extinction because of their very low numbers.

65. The Gold Creek population was until recently reasonably abundant, among the strongest remaining in the Alberta native range. But some evidence cited here suggests that it may have taken a significant downturn in the last few years. The trajectory of the stock, as a best estimate, is stable to declining. The prognosis is, at best, guarded.

66. Mr. Mayhood submitted that SARA has strong provisions protecting individual westslope cutthroats, their critical habitat, and their spawning sites. Critical habitat, in whole or some part of it, unavoidably will be destroyed by Benga's proposed mine. This will happen directly when watercourses are dug up or covered over. It will happen as water is intercepted and diverted away from Gold Creek and into the Blairmore Creek watershed. These consequences are entirely predictable and inevitable, even essential consequences of surface mining within the watershed. According to SARA 58(1), they are illegal.

67. Mr. Mayhood also submitted that Benga's proposal to offset the habitat it will destroy by mining is replete with problems. Offsets are not in any way suitable substitutes for the habitat that will be lost to the mine.

Dr. Norman

68. Dr. Norman's evidence was that Benga's estimated precipitation based on climate model runs is highly uncertain and significant discrepancies between projections exist for the Grassy Mountain site. Assumptions that lead to a potential under prediction of precipitation intensity, duration and frequency place the project, the ecosystems, and the communities downstream at risks above those stated throughout the EIA.

69. Dr. Norman also submitted that If significant sediment and surge pond breaches, ditch overflow and dam failures were to occur based on an underrepresentation of precipitation extremes going forward, the effects would be much more consequential than if precipitation extremes are under predicted. The precautionary principle suggests the most conservative approach should be adopted to ensure sufficient safeguards are put in place to protect the ecosystem, communities, and the mine infrastructure should the project proceed.

Dr. Rasouli

70. Dr. Rasouli's evidence is that higher frequency of intense precipitation projected for the future increases the likelihood of potential occurrence of a malfunction or an accident that may affect communities, natural sites of interest, critical habitat for species at risk, and areas of major use.
71. Dr. Rasouli submitted that Benga had underestimated the effect of high precipitation events and the role of high elevations rain-on-snow events under climate change in its environmental assessment resulting in an under prediction of the likelihood of the large floods. It is likely that future floods will be more destructive than the historical flooding and there is no guarantee that the dams proposed by Benga will be resistant to high flows and intense precipitation events.

GEOLOGY, GEOTECHNICAL (INCLUDING DAM SAFETY) AND MINING, ACCIDENTS AND MALFUNCTIONS, INDUSTRIAL WASTE AND WASTE MANAGEMENT, EFFECTS OF THE ENVIRONMENT ON THE PROJECT (INCLUDING CLIMATE CHANGE), AND OTHER ISSUES

72. Section 19(1) of the CEAA 2012 requires the environmental assessment of a designated project, and the Proposed Mine is a designated project, must take into account the following factors:

“(a) the environmental effects of the designated project, including the environmental effects of malfunctions or accidents that may occur in connection with the designated project and any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;” (Emphasis Added)

And...

“(b) the significance of the effects referred to in paragraph (a);” (Emphasis Added)

And

“(d) mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the designated project;” (Emphasis Added)

73. Mr. Houston, on behalf of Benga, in response to questioning by Timberwolf about sediment pond failure, confirmed that failure is a possibility with any engineered structure¹⁶ and that Benga was “not in the business of reducing risks to zero”.¹⁷
74. Further, Mr. Houston repeatedly referred to Alberta Government dam design and safety guidelines, and specially the requirement for inundation studies^{18,19}, and good engineering as “mitigation” from the potential environmental effects that may occur of dam failure but confirmed that inundation studies had not been done²⁰ and that detailed dam engineering had not been completed for the sedimentation ponds. Neither inundation studies nor detailed engineering, Benga’s principle approach to dam failure mitigation, are in evidence in this Proceeding.
75. Mr. Houston, in response to questioning by Timberwolf if the Alberta Government dam design and safety guidelines, and specially the requirement for inundation studies, which Benga relies upon, address the special circumstance of species listed under

¹⁶ CIAR #793 at Ln 2 – 5, Page 1804

¹⁷ CIAR #793 at Ln 22 – 24, Page 1813

¹⁸ CIAR #793 at Ln 20-24, Page 1804

¹⁹ CIAR #793 Page 1814

²⁰ CIAR #793 at Ln 20-24, Page 1804

SARA, confirmed that those Alberta Government requirements do not address endangered or threatened species.²¹

76. Further, Mr. Houston, in response to questioning by Timberwolf about how Benga would mitigate a dam failure, indicated that Benga would have in place an “appropriate” emergency response plan but confirmed that those emergency response plans have not been prepared and are not in evidence in this Proceeding²².
77. Mr. Houston confirmed that Gold Creek contains WCT that are listed and protected under SARA²³ and that Benga was aware of this fact.
78. Mr. Houston, in response to protracted questioning by Timberwolf that Benga does not have anything in its application that would look at the potential significance of a failure of one of a surge or sediment pond dam on the threatened westslope cutthroat trout, confirmed Benga had not “assessed the significance” of a potential failure of a surge or sedimentation dam on the WCT population in Gold Creek.²⁴
79. Timberwolf notes that the sediment release event in 2016 has apparently had significant effect on the Gold creek WCT, as demonstrated by Mr. Jim Rennie’s evidence, and even though its actual cause was not established it demonstrated how sensitive the Gold Creek WCT are to disturbance. Benga seems unaware of the great sensitivity of WSCT critical habitat and population to even minor spills. Benga’s testimony severely underplays its importance as a result.
80. Timberwolf submits that if all of the respective provincial and federal government agencies with responsibilities relating to protecting fish and fish habitat could not, with all of their resources, predict, monitor for, protect against, and respond effectively to a minor but apparently devastating spill, we cannot reasonably expected them to

²¹ CIAR #793 at Ln 11-15, Page 1814

²² CIAR #793 at Ln 1-3, Page 1811

²³ CIAR #793 at Ln 2, Page 1812

²⁴ CIAR #793 at Ln 2, Page 1818

adequately protect the Gold Cr WCT population and its critical habitat if Benga's proposed Mine is approved, constructed and operated.

81. Timberwolf respectfully submits that Benga has not met the mandatory requirements of Section 19(1) of CEEA 2012 nor the Final Environmental Impact Statement Guidelines (Terms of Reference)²⁵ and has therefore failed to meet its onus. On this basis alone Benga's application should fail.

WATER, INCLUDING SURFACE AND GROUNDWATER MANAGEMENT, QUALITY AND QUANTITY, SELENIUM MANAGEMENT AND AQUATIC RESOURCES, INCLUDING FISH, FISH HABITAT AND FISHSPECIES AT RISK

82. Mr. Houston, in response to questioning by Timberwolf confirmed that the Proposed Mine will result in the direct destruction of riparian habitat that has been deemed as critical habitat in the 2019 Recovery Plan²⁶.
83. Timberwolf notes that Mr. Bettles, Benga's principle expert witness with respect to aquatic resources, including fish, fish habitat and specifically SARA protected WCT, is a professional biologist in British Columbia who has experience with coastal non-threatened coastal cutthroat trout on Canada's West Coast but until he was retained to assist with preparation of the Benga environmental assessment he had no previous professional experience with Alberta's Rocky Mountain East Slopes streams or its WCT populations and critical habitat.²⁷ Additionally, Mr. Bettles acknowledged that the ecological characteristics of coastal cutthroat trout and Alberta WCT are significantly different.²⁸
84. Further, Timberwolf respectfully notes that throughout extensive cross examination by Mr. Sawyer, Mr. Bettles consistently demonstrated a pattern of failing to practice good

²⁵ CIAR #11, Section 3.2, PDF page 8

²⁶ CIAR #866, 3676:3-5

²⁷ CIAR #866, 3676:20 to 3677:5

²⁸ CIAR #866, 3709:10-17

science, lacking local or regional knowledge about the threatened Alberta WCT population, demonstrated a poor grasp of the extensive scientific literature that is relevant to understanding the ecology, conservation status and management of SARA protected WCT sub-population in Gold Creek and was generally unaware of the historical and current land uses that would be relevant in assessing the potential environmental effects on WCT if the Proposed Mine was approved, constructed and operated. Timberwolf provides the following examples to support its views on Mr. Bettles' professional competence. For the sake of brevity this is a non-exhaustive summary.

85. Having regard to the previous paragraph, while being questioned by Timberwolf, Mr. Bettles demonstrated his deep lack of understanding of highly relevant local knowledge:²⁹

Q: Mr. Bettles, are you aware that Shell Canada Limited drilled a sour gas well in Caudron Creek, a tributary of Gold Creek?

A: To my knowledge, I'm unaware of that. It's away from the -- it's away from the mine site, so I'm unaware of that. My focus has been on the -- for the mine project.

Q: So I take it, then, you did not refer to the environmental impact study that Shell did in support of its regulatory application to the then ERCB, and you also, of course, wouldn't have been aware that they did a fisheries assessment of Caudron Creek and Gold Creek; is that correct, sir?

A: That's correct.

86. Timberwolf respectfully submits that Mr. Bettles' lack of awareness of the Shell Caudron Creek well and more specifically, the environmental assessment and fisheries study that was done to support that well, is an indication of the lack of due care, effort and scientific rigour Mr. Bettles and Benga brought to bear in the preparation of the Benga application. And Timberwolf submits that errors such as demonstrated with the Shell Caudron Creek well ought to call into question the quality, veracity and scientific rigour of the Benga application in its entirety.

²⁹ CIAR #866, 3764:25 to 3765:12

87. Timberwolf submits that effective use of descriptive statistics is one of the hallmarks of good science. Good research provides information and understanding which allows us to more effectively value alternatives and make better decisions. When consultants, like Mr. Bettles, report their results without confidence intervals, rather than reduce risk, it actually increases risk. Failure to properly calculate and report confidence intervals increases the risk the reported results do not represent reality.
88. Timberwolf respectfully submits that one of the major challenges in modern environmental assessment is getting decision makers to make a realistic assessment of the uncertainty of the data being presented by parties before them. The natural tendency of proponents and their consultants is to entirely avoid providing confidence intervals or estimating too narrow a range for confidence intervals, thereby increasing risk. Timberwolf submits that Benga and Mr. Bettles, in an effort to plump-up their case, have followed this unfortunately standard approach resulting in just bad science. As a result, Timberwolf submits that much of the information contained in Benga's application is biased, scientifically flawed and should be carefully and critically reviewed by the Panel in their deliberations.
89. For example, Mr. Bettles, in response to questioning by Mr. Sawyer about why Mr. Bettles' reported population estimates did not include confidence intervals, Mr. Bettles confirmed that he had the confidence intervals but had not reported them with his results. Similar discussion occurred throughout the questioning of Mr. Bettles by Mr. Sawyer^{30, 31}:

“Q: ...You've told us that you used one of the Peterson methods, and my question to you was: Are you aware that the Peterson methods allow calculation of confidence intervals so that we can interpret your results and know how reliable they are?

A: Yes, I'm aware, and -- and -- of that -- and -- and yes, you're correct, we did not include confidence intervals in it, though we -- we do have confidence intervals for those -- those numbers.

Q: And those numbers are not published in your application anywhere [sp.]?

³⁰ CIRA #866, 3696:22 to 3697:6

³¹ CIRA #866, 3701:15-20

A: No. That's correct."³²

90. Subsequent to receiving an undertaking from Mr. Bettles with respect to produce the confidence intervals for Benga's so-called population studies³³, Timberwolf had a lengthy³⁴ question of Mr. Bettles that resulting in the following exchange:³⁵

Q: And so now when I looked at the earlier number for Reach 9, it said in the same document we were referring to it was 616 metres long. Now, you've told me that's not correct, that you didn't use that number. And instead, you've told me you used this number, which is 2,130, which is over a hundred metres longer than the number you used in your population estimate; correct?

A: That's -- that's correct.

Q: How do you explain that?

A: I believe that -- that's an error. (Emphasis Added)

91. With respect to the previous paragraph Mr. Bettles' inability to answer relatively simple questions about survey mythology and the numerous changes in approach and finally the errors identified during Timberwolf's questioning inevitably leads to the inference that Benga's, and Mr. Bettles', conclusions with respect to fish population and/or densities are inaccurate and ought to be viewed with skepticism.
92. Timberwolf further submits that the process of publication and peer review of research results is another hallmark of good science, as is reliance on and properly referencing published and peer reviewed reports that are relevant to any specific field of inquiry. One of many examples where Mr. Bettles did not avail himself of the existing knowledge base with respect to SARA protected WCT in Gold Creek is demonstrated in an exchange with Mr. Bettles during questioning by Timberwolf:

Q: I'm not a fisheries biologist, but I'm aware of at least two westslope cutthroat trout population estimates in addition to Hatfield's work that have taken place within Gold Creek within the last ten years. Have you reviewed those results, and, if so, where are those results referenced in your application documents?

³² CIRA #866, 3681:16 to 3682:1

³³ CIRA #877, Benga Undertaking #19

³⁴ CIRA #881: to 4277 to 4301

³⁵ CIRA #881:4286:11-20

A: Yes, I am. I'm aware of the Alberta Conservation Association 2010 report authored by Mr. Blackburn. I'm aware of that population estimate. And I'm also aware of the numbers that were presented in the COSEWIC 2016 report.

Q: Okay. And are those two studies referenced or discussed anywhere in your application materials?

A: No, they're not.

Q: And can you tell me why they're not?

A: I -- I -- I think it just -- I think it comes down that we -- our -- we were -- we were focused on wanting to know what was going on and the conditions at the time of our surveys. I know the COSEWIC 2016 document gave numbers, but didn't give any details associated with that that we felt that was -- that gave us any sort of understanding of how the approach was done. And then the ACA, we felt that -- we -- we understood the numbers, but we just felt we wanted to focus on the existing conditions that we were trying to calculate and characterize, given the age of that data.

Q: So, Mr. Bettles, I mean, you've presented most recently ...your letter report that purports to represent trends. So I would think that, you know, from a fisheries science point of view, that -- that two population estimates, one that was ten years ago and one that was four years ago, would be highly relevant. You've told us that you looked at it. I'm really curious, as a scientist, sir, how could you not consider those two population estimates in your application documents? Are they not important?

A: Mr. Sawyer, our -- our goal was to understand what the population was at -- at the present time, and we -- we took an -- we -- we took an approach to understand what the existing conditions are and what we felt was an appropriate approach to understanding what the actual population was in Gold Creek..."

93. Timberwolf submits that many similar exchanges took place through the cross examination of Mr. Bettles by Timberwolf demonstrative of a surprising disregard on the part of Mr. Bettles, a professional biologist, for the well-established scientific principles relating to building on the known knowledge base and properly referencing relevant scientific reports. Timberwolf believes that this reflects poorly on the over-all quality of Mr. Beetles' work and significantly reduces the confidence the Panel should place on his evidence.³⁶

³⁶ CIAR #866, 3751:8 to 3762:2

94. Notwithstanding the previous paragraph Timberwolf submits that Mr. Bettles and Benga's refusal to acknowledge or reference Benson, Luek, and Rasmussen, 2017, "Overwintering Habitat Use by Westslope Cutthroat Trout in Mountain Headwater Streams of Southern Alberta" or the MSc thesis research results of Benson 2019, the "Ecology of Westslope Cutthroat Trout Populations in Three Small Rocky Mountain Headwater Streams" in their application is particularly egregious. Under questioning by Timberwolf Mr. Bettles responds:

Q: Mr. Bettles,... ..Have you made reference to Benson 2019 anywhere in your application documents?

A: No, we -- it does not.³⁷

95. Having regard to the preceding paragraphs, Timberwolf submits that the Panel should be particularly troubled by Mr. Bettles and Benga's lack of transparency with respect to Benson's research results given that Benga in part funded Mr. Benson's research and that Benga was kept apprised of the research findings.³⁸

96. Further, Timberwolf submits that despite being aware of Benson's highly relevant work, Bettles didn't use any of it. As a result, Bettles did not account for (or didn't understand) the crucial importance of low water in the spaces between potential overwintering habitat for adults and large juveniles, and the fact that preferred critical overwintering habitat for small juveniles consists of the interstices among cobbles and boulders. As a result, many of the reasonably predictable effects of low fall through late winter flows on critical habitat were missed, and no attempt was therefore made either to predict those effects on the fish. Nor did Benga's habitat offset schemes deal with offsetting those effects.

97. Following from above, Timberwolf further submits that the consequences are that the conceptual habitat offset scheme proposed by Benga cannot work: it doesn't deal with destroyed critical overwintering habitat, so that habitat is not actually offset.

³⁷ CIAR #866, 3753:9-12

³⁸ CIAR #866, 3754:3-17

98. To put this matter into context, it is noteworthy to compare Mr. Bettles' results to Benson's results with respect to identifying WCT overwintering habitat and population numbers on Gold Creek. That comparison follows:

99. Benga and Mr. Bettles purport to have conducted multiyear estimates of WCT populations in Gold Creek. Timberwolf submits that is false as demonstrated by the following exchange between Mr. Bettles while being questioned by Timberwolf:³⁹

Q: So, Mr. Bettles ...that last answer was helpful but nonresponsive to my question. My question was: Can you confirm that you do not have an accurate multiyear estimate of westslope cutthroat populations and the trends in those populations [Gold Creek]?

A: I would say we -- because of how things have changed since 2016, yeah, there's been a sharp decline. But I would argue that since -- since then that there are some trends that you're -- that we've -- that we've -- that we've illustrated through our -- through our monitoring.

Q: Mr. Bettles, that was not my question. My question is: Do you have an accurate multiyear estimate of westslope cutthroat trout populations and the -- the variation in Gold Creek?

A: No, we don't. (Emphasis Added)

100. Mr. Bettles also confirmed during questioning by Timberwolf that groundwater flows, groundwater upwelling, and those contributions to base flow are critically important features to westslope cutthroat trout habitat both in summer and particularly in winter.^{40, 41}

101. Notwithstanding Mr. Bettles' confirmation about the critical importance of groundwater flows to WCT, particularly during the critical winter period, Ms. Grainger, Benga's hydrogeologist, had the following exchange with Timberwolf.⁴²

³⁹ CIAR #866, 3706:7-23

⁴⁰ CIAR #866, 3710: 5-10

⁴¹ CIAR #866, 3719:15 to 3720:5

⁴² CIAR #866: 3710;22 to 3711:10

Q: Ms. Grainger, in preparing your evidence, did you conduct any systematic field investigations with respect to the location and character of groundwater discharges into Gold Creek or its tributaries?

A: In answer to your question... ...we didn't complete investigations of groundwater discharge along the creeks themselves. We did review areas of groundwater discharged within the main part of the project site but not at the creeks. (Emphasis Added)

102. In response to further questioning by Timberwolf, Ms. Grainger confirmed that the pumping of groundwater out of the open pit will cause water levels and hydraulic head within the subsurface geology to be permanently decreased.⁴³
103. Timberwolf submits that Benga's evidence demonstrates a complete disconnect between the negative effects of pit dewatering and resulting reductions in groundwater flows and the critically important ecological role that groundwater upwelling plays in maintaining both summer and winter temperature regimes in Gold Creek.
104. In response to questioning by Timberwolf with respect to the significance of predicted groundwater flow reductions Ms. Grainger stated:⁴⁴

Q: ...you've concluded that the duration of the impact is permanent; the frequency of the impact is continuous; the impacts are irreversible; the project contribution is negative, meaning that it's an adverse contribution; that you have only moderate confidence in your model... ..and the probable impact occurring is certain?

A: You reviewed them quite quickly there, Mr. Sawyer, but I'll take your word if those are as written in our document.

Q: So where I am perplexed is that when you get to the last bullet point that you conclude that the significance is not significant, how could you possibly arrive at that given all of the previous statements? I'd like you to explain that to me.

A: Well, fundamentally, the -- so, to be clear, this is affecting -- or this is an assessment of the effects of mine dewatering on water -- groundwater quantity in

⁴³ CIAR #866: 3731:9-14

⁴⁴ CIAR #866: 3735:9 – 3736:22

bedrock aquifers. So it's specific to that value component. The rationale for the final assessment is that the magnitude of the effect was assessed as low.

Q: ...In doing your groundwater assessment, you did not consider the potential impacts on the threatened westslope cutthroat trout sub-population that occurs in Gold Creek in arriving at your determination of no significance?

A: This was, as I said, specific to the effect of the project on groundwater with respect to bedrock aquifers. So in 5.3.2.2.3, we report the results of the groundwater model with respect to base-flow reductions at end of mine and long-term closure, and then those predictions are assessed by others in terms of the potential significance of those.

Q: Right. So the answer to my question is: No,

A: Mr. Sawyer, we did not consider that; correct.

105. Timberwolf refers to and supports the testimony of Dr. Fennell, expert witness for the AWA Coalition on matters of hydrogeology.

106. With respect to Benga's groundwater modelling, Dr. Fennell concluded⁴⁵:

"The groundwater numerical model can only be described as a gross simplification of this complex system, with assumptions that do not match with the reality of the Project area. Although the model has been described as having a "good" match between simulated and observed changes to groundwater levels at a limited number of locations, and protracted records of baseflow in both Blairmore and Gold creeks, this is not completely true for all parts of the model domain. The lack of spatial and temporal data used to constrain the model in relation to the very large geographical area, combined with the unrealistic assumptions regarding the role of faults and fractures in the movement of groundwater from the upland areas to the creeks, severely hampers the numerical model projections provided."

107. Dr. Fennell also concluded that after taking into consideration of the complex geologic and hydrogeologic conditions at the proposed Benga Proposed Mine site, as well as critical input parameters like precipitation, that Benga has underestimated the impacts of the project on the groundwater and that a significant and permanent reduction of groundwater flows into both Gold creek and Blairmore Creek will be the result.

⁴⁵ CIRA #553, PDF Page 69

108. In response to further questioning by Timberwolf with respect to the significance of predicted groundwater flow reductions Ms. Grainger stated:

Q: In the process of preparing your report and -- and working on this project, did you have any discussions about the conservation status of westslope cutthroat trout in the context of your hydrogeological study with any other member of the Benga team?

A: I don't recall any such conversations, Mr. Sawyer.⁴⁶

109. Ms. Grainger then confirmed that Benga's Proposed Mine is predicted to cause up to a 19 percent reduction in base flow in Gold Creek during mine operations and up to 18 percent permanent reduction of base flow in Gold Creek after reclamation.⁴⁷

110. Timberwolf notes that in lengthy questioning of Ms. Grainger it became apparent that the flow reduction values presented in Benga's application were sometimes presented as estimates of annual means and sometimes as estimates of monthly means. And at no time were instantaneous minimum/maximum or daily values presented. Timberwolf submits that presenting mixed metrics without consideration of minimum or maximum instantaneous groundwater flows is highly inappropriate because trout experience negative physiological effects within seconds of being deprived of water, and cannot survive more than a minute or so of air exposure. Monthly flow means seriously overestimate the amount of water available to trout and has the effect of under or over estimating the ecologically critically important high and low groundwater flow events. As a result Timberwolf submits that Benga's evidence has minimized the true impact that Benga's dewatering activities will have on groundwater flow and therefore on SARA protected WCT.⁴⁸

⁴⁶ CIAR #866, 3736:24 to 3737:4

⁴⁷ CIAR #866, 3738:1-6

⁴⁸ CIAC #866: 3776:15-22

111. While being questioned by Timberwolf with respect to WCT juveniles, Mr. Bettles confirmed that SARA protected WCT young-of-the-year juvenile cohort is a critical factor of WCT population dynamics that affect their viability and conservation status.⁴⁹
112. Timberwolf further notes that while Mr. Bettles claimed to do “some density estimates looking at juvenile recruitment”,⁵⁰ the uncontested fact is Bettles did not find any young-of-the year or early juvenile trout during any of their survey or monitoring work⁵¹ and therefore could not have done the density estimates looking at juvenile recruitment he claimed. Timberwolf submits that Bettles’ disinformation raises more serious questions about his credibility. Timberwolf recommends that the Panel weigh his evidence accordingly.
113. In sharp contrast to Mr. Bettles’ failure to identify any WCT young-of-the year or early juvenile trout during any of their survey or monitoring efforts is the work of Benson et al. 2017 and Benson 2019⁵² the latter of which found approximately 253 sites that contained WCT young-of-the year or early juvenile trout (<20 cm).
114. With respect to critically important WCT over-wintering habitat in Gold Creek winter habitat, under questioning from Timberwolf, Mr. Bettles confirmed that his study identified only 10 “likely” overwintering sites and that only four of those actually contained any fish. In sharp contrast Mr. Bettles confirmed that Benson 2019 found 253 sites of which 14 were described as high quality winter holding habitats.⁵³ Mr. Bettles described Benson’s work as a “detailed” study in comparison to his more “generalized” study⁵⁴
115. With respect to WCT movement throughout the Gold Creek watershed, Mr. Bettles also confirmed that movement routes are critical habitat, and especially important in

⁴⁹ CIAC #866: 3815:1-7

⁵⁰ CIAC #866: 3677:19 to 3678:1

⁵¹ CIAC #866: 3794:7-16

⁵² CIAC #859

⁵³ CIRA #866:3810:12 to 3812:18

⁵⁴ CIRA #866:3812:1-18

winter, when they are likely to be blocked by anchor ice, frazil ice, ice dams or dry reaches of sub-surface flow.⁵⁵

116. Timberwolf notes that notwithstanding the critical importance of movement corridors to SARA protected WCT in Gold Creek, Mr. Bettles made no effort to document this critical habitat component in his studies.⁵⁶

Q: Okay. Mr. Bettles... ..I do want to come back to the question of westslope cutthroat trout movement in the Gold Creek. And I submit to you that Hatfield did not document any trout movement corridors, seasonally or otherwise. If I'm wrong, can you point me to where in Benga's application this information is addressed?

A: No, you're -- you're -- you're correct. We did not do any formal migration studies or movement studies --

117. Timberwolf notes that Brown, 1999, "Fall and Early Winter Movements of Cutthroat Trout in Relation to Water Temperature, Ice Conditions in Dutch Creek"⁵⁷ addresses in detail the issues around the importance of movement patterns of WCT in an ecologically similar watershed located less than 20 km northwest of Gold Creek. Timberwolf submits that this another example of highly relevant scientific literature that Mr. Bettles has confirmed that he did not read.⁵⁸

118. In Benson 2019 one of his conclusions is as follows:

"The results from this study suggest that identifying winter refuge pools is vital for the successful management of a threatened species within these small headwater streams. In the streams studied, pool habitat made up only a small percentage of all other habitats available (6 %). Furthermore, out of the total number of pools available, only a small number of these actually supported even a single adult WCT during winter (< 30 %). Yet, these pools facilitate the survival of the majority of the breeding segment of threatened WCT populations during at least half of the year, without many alternatives. This makes pool habitats extremely important in the conservation of threatened WCT populations in small

⁵⁵ CIAC #866: 3819:25 to 3820:9

⁵⁶ CIAC #866: 3819:1-6

⁵⁷ CIAC #860

⁵⁸ CIAR #866: 3824:1-7

headwater streams and attention should be given to measures that allow protection of these habitats."⁵⁹ (Emphasis Added)

119. In response to questioning by Timberwolf, Benga confirmed that it was aware that a recovery plan for WCT had been issued⁶⁰ and that subsequent to the release of that Plan the legal definition of "critical habitat" under the Species at Risk Act has changed.⁶¹

120. Further, Benga confirmed that their application used a previous, more limited, definition of critical habitat for the purposes of preparing the environmental assessment with respect to threatened WCT⁶², that the extent of legally protected critical habitat in Gold Creek watershed had dramatically increased and that Benga had not provided an update to its estimate of impact to critical habitat for fish or fish habitat in Gold Creek since the recovery plan was released.⁶³

121. After extended questioning by Timberwolf, Mr. Bettles acknowledged that its application did not contain any measure of how many hectares of legally defined "critical habitat" the Proposed Mine would destroy:

Q: I said using the current definition of "critical habitat", how many hectares of habitat is your project going to affect, and you can't answer that, can you?

A: Not -- not specifically, no.

122. Mr. Bettles confirmed that the Recovery Plan was issued nearly a year earlier in December 2019.⁶⁴

123. Timberwolf notes that in the almost a year since the Recovery Plan was released, Benga filed at least two addendums to its application, one on March 13, 2020⁶⁵ and

⁵⁹ CIAR #859: Page 155

⁶⁰ CIAR #866:3834: 8-11

⁶¹ CIAR #866:3839: 3-10

⁶² CIAR #866: 3839:13-20

⁶³ CIAR #866: 3840:21 to 3841: 5

⁶⁴ CIAR #866: 3844:21-25

one on June 19, 2020⁶⁶. The record also confirms that at no time during the period after the Recovery Plan was released, changing the legal definition of WCT critical habitat in Gold Creek, did Benga provide an update to its application materials with respect to the area of legally protected critical habitat that the Proposed Mine would destroy. As a result this critically important information was not placed on the record by Benga and the implications of that change in legal definition of critical habitat has not been quantified or analyzed. Timberwolf submits that updating the area of critical habitat destroyed by Benga's Proposed Mine would have been a relatively straight forward GIS exercise and that information could have been easily provided to the Panel and other hearing participants. But the evidence clearly indicates that Benga chose not to provide an update with respect to the area of critical habitat its Proposed Mine would destroy. Timberwolf further submits that this failure by Timberwolf is additional evidence that Benga has not meet its onus and that the Panel should recommend that the Proposed Mine not be approved.

124. On questioning by Timberwolf, Benga confirmed that it agreed that the precautionary approach should be the dominant principle in the Panel decision-making with respect to whether the Proposed Mine is in the Public Interest⁶⁷.

125. In response to by Timberwolf, Benga confirmed that notwithstanding their efforts there is still risk to the threatened and legally protected WCT.⁶⁸

Q: So you're telling me -- as a professional biologist who's under oath and has a professional code of ethics that you should take heed of, you're telling me that there is no risk that you're wrong with respect to the impacts on west throat -- slope cutthroat trout?

A: Let me -- please let me finish. I just would like to say that we did indicate there is an element of risk in everything we do, and everything we're doing right now is to try and reduce that risk.

Q: Okay. So when I ask you: Is there some risk? The correct answer would be: Yes, Mr. Sawyer, there is?

⁶⁵ CIAR #313

⁶⁶ CIAR #360

⁶⁷ CIAR #866:3866:1-5

⁶⁸ CIAR #866:3868:9-26

A: Well, as I -- as I -- I think I've made that clear, that I've indicated there is some risk.

126. In response to questioning by Timberwolf, Benga confirmed there where critical habitat was irreplaceable or where offsets has a high probability of failing, that offsetting would be inappropriate.⁶⁹

Q: So do you agree with me, Mr. Houston, that offsetting would be inappropriate where critical habitat is irreplaceable?

A: I -- I think that would -- it would depend on the definition of the critical habitat. In this case, or example, critical habitat is defined as a buffer around the -- the upstream tributaries. That's what we're talking about, the riparian habitat. And -- and although it's necessary for -- for the westslope cutthroat trout, you know, that -- that -- that habitat is replaceable. So I -- I guess when you talk about "irreplaceable", I'm -- I'm trying to understand what that would mean.

Q: Okay. So if it was irreplaceable, would you agree that -- that offsetting would not be appropriate?

A: Considering I'm not quite sure what is irreplaceable, but I -- you know, in that hypothetical world, I would -- I would agree with you.

Q: Okay. And what about if there's a high probability of -- of the offset failing?

A: Again, hypothetical question that assumes multisystem failures to get there? That -- that's what you're asking me?

Q: Yeah...

A: Again, in that hypothetical world, I -- I -- I would agree with you.

127. Benga confirmed under questioning by Timberwolf that it understands that the Panel decision with respect to Benga's Proposed Mine must be made based on the evidence on the record of this proceeding rather than information that might come in the future.⁷⁰

Q: Mr. Houston, would Benga agree that the decision of this Panel needs to be made based on the evidence that's before it rather than evidence that might come in the future?

A: Absolutely

⁶⁹ CIAR #866:3871:12 to 3872:

⁷⁰ CIAR #866:3902:18-22

COMMENTS ON DFO SUBMISSION

128. Timberwolf provides the following comments on selected aspects of the DFO September 21, 2020 submission to the Panel which is filed as CIAR #542 on the evidentiary record. In many instances they will align with Timberwolf's previous argument and in some instance they will cover new ground.

129. Timberwolf provides these comments because of its interest in matters relating to the potential effect of the Benga Proposed Mine on the SARA protected WCT found in Gold Creek watershed. Given the DFO's unique role as an intervenor in these Proceedings and as the regulator responsible for the administration of the Fisheries Act and SARA, and given that Benga has indicated that it cannot construct and operate the Proposed Mine without a SARA section 73 permit, Timberwolf believes that the Panel may benefit from the integration of Timberwolf's perspective and the DFO comments, both on its interpretation of legislation and policy, and its expressed views on the Benga application.

130. Additionally, for the sake of brevity Timberwolf has not re-presented all of DFO's criticisms of the Benga application but has selected passages that make what Timberwolf believes are key points. Notwithstanding this, Timberwolf highly recommends that the Panel carefully review the DFO September 21, 2020 submission.

131. As previously submitted, Timberwolf believes that the Government of Canada, and Benga, have misinterpreted section 73 of SARA. Notwithstanding that disagreement, there are many aspects of the DFO submission that Timberwolf does support. Timberwolf disagrees with DFO on the following points.

132. Timberwolf submits that one of the contentious issues in this Proceeding has been the question of offsetting. The DFO submission included principles applicable to offsetting⁷¹ that include:
- a. Benga's Proposed Mine will not jeopardize the survival or recovery of the species (SARA section 73(3)(c));
 - b. Offsetting should not be relied on exclusively, as SARA requires that all options to avoid and minimize harm are fully utilized (SARA section 73(3)(a));
 - c. Preservation should be given first priority; and
 - d. There are circumstances where offsetting is not appropriate, such as where critical habitat is irreplaceable, there is a high probability of the offset failing or where the impacts from the offset failure could be significant.
133. Timberwolf submits that the common definition of the jeopardize means to “*put (someone or something) into a situation in which there is a danger of loss, harm, or failure*”, in this instance putting the Gold Creek WCT in jeopardy. The concept of jeopardy involves risk and risk is “a situation involving danger”. Timberwolf submits that there is compelling unequivocal evidence on the record of this proceeding that the Benga Proposed Mine, if constructed and operated, does constitute a risk to the Gold Creek WCT sub-population.
134. Going back to the burden of onus being on Benga to prove that its Proposed Mine is in the Public Interest, or in the context of the SARA, that the WCT Gold Creek population will not be extirpated, Timberwolf submits that Benga could have attempted to meet that onus by preparing a risk assessment or an extinction risk assessment or some other form of established semi-quantitative risk analysis. But there is no evidence on the record that Benga has done that. During the oral hearing Timberwolf asked Benga if they had prepared a population viability model, a form of risk assessment, to which they replied they had not.⁷²

⁷¹ CIAR #542:PDF Page 232

⁷² CIAR #866:3865:14-26

135. Additionally, during questioning by Timberwolf had the following exchange with Mr. Bettles⁷³:

Q: Mr. Bettles, as a professional biologist, particularly with fisheries background, would you agree... ..with me that there is some risk that Benga's proposed coal mine will jeopardize the survival or recovery of the westslope cutthroat trout in Gold Creek?

A: Mr. Sawyer, you're -- trying to define zero risk is -- is obviously a challenge. At this stage, I -- I -- I can't say that with certainty, that there's -- there's zero risk.

Q: Okay. So if you can't say there's zero risk that means there must be some risk.

A: Well, I can't -- I can't put an actual number on that.

Q: No, I'm not looking for a number, sir. I'm just looking for an acknowledgement that there -- there is always some risk...

A: Well, there's risk in everything we do in life...

136. Timberwolf submits that there is evidence on the record indicating the critical habitat of the Gold Creek WSC is irreplaceable. For example, the Gold Creek WCT already exist in an environment constrained by low water flow conditions where they rely on groundwater up-welling for many of their important life stages⁷⁴ and yet Benga's evidence is that its dewatering of the mine pit will permanently reduce monthly mean ground water flows by up to 20 percent. Other evidence suggests these reductions are severely underestimated.⁷⁵ Given the uncontested importance of groundwater to the persistence of the Gold Creek WCT and no realistic plans from Benga on how they might deal with 20 percent or much more reductions in ground flow on the record of these proceedings, Timberwolf submits that the Panel should conclude based on the evidence before it, that the WCT habitat is irreplaceable.

137. More to the previous point, Benga simply doesn't propose to replace groundwater lost from Gold Creek. Water itself is critical habitat and they are destroying it as habitat by,

⁷³ CIAR #866:3866:3865:7-25

⁷⁴ CIAR #859

⁷⁵ CIAR #553. Evidence of Dr. Fennell

effectively, an inter-basin transfer of large amounts of it to Blairmore Creek, and are permanently contaminating more of it.

138. Timberwolf further submits that there is evidence on the record that the majority of fisheries offset and compensation efforts have failed. Given the complexity of the situation, the precarious status of the WCT and the likelihood of an offsetting failure could have catastrophic consequences for the WCT in Gold Creek.
139. Timberwolf notes that DFO's submission on offsetting set out two additional and important considerations that they would need to address in considering issuing a section 73 permit to Benga.
140. The first additional consideration is that the offset must contribute to the attainment of population and distribution objectives described in the recovery strategy or action plan for the affected species. Timberwolf submits there is no evidence on the record that Benga's conceptual offset plans will achieve this.
141. The second additional consideration is that proposed offsetting should be implemented and confirmed functioning prior to impacts occurring. In circumstances where you have a sensitive threatened species and where there is uncertainty about the efficacy of the proposed offsets Timberwolf submits that it is prudent to implement proposed offsets and confirm them to be functional before the impacts occur. DFO made this recommendation in its submission⁷⁶ to the Panel but Benga has rejected that as untenable.⁷⁷
142. Timberwolf respectfully submits that Benga's outright rejection of DFO's recommendation that offsetting measures be implement and proven to be effective before WCT are put a risk is a clear indication that Benga deeply misunderstands the importance and significance of the conservation status of the WCT and its protection

⁷⁶ CIRA #542

⁷⁷ Benda Final Argument: PDF Page 103, Para 398

under SARA. It is also a clear indication that Benga, as a company, not surprisingly, puts making a profit ahead of protecting the Gold Creek WCT.

143. With respect to Benga's loose conceptual proposal that draw down of groundwater and resulting low flows can be compensated for by redirecting water from the mine, or Blairmore Creek, Timberwolf agrees with and supports the following DFO statement:

“...due to potential water quality issues, there appears to be a lack of confidence that there will be enough water of sufficient quality that this type of mitigation can be guaranteed.”⁷⁸

144. Further, to obtain uncontaminated water to augment flows in Gold Creek, Benga will have to withdraw it from above the mine influence. That simply impacts Blairmore Creek even more, at a point where it also likely suffers from low flows, especially in winter.

145. With respect to the appropriateness of Benga's groundwater/hydrology assessment approach and methodology, Timberwolf agrees with and supports the following DFO statements⁷⁹:

“...the simulation results have a high level of uncertainty on a monthly basis, specifically during low flow conditions... ...This analysis does not incorporate monthly streamflow variability, only annual precipitation variability, which limits the model's ability to accurately predict the impacts of the Project... ...the predictive power of the model during hydrologic drought is questionable. The use of runoff coefficients to estimate future hydrologic conditions is subject to high uncertainty. Additionally, the complex relationships identified between the surface and subsurface by the ongoing gauging program (especially on Gold Creek) suggest a more rigorous analysis approach is warranted. (Emphasis added)

And...

The model represents a limited and insufficient framework for assessing the impacts to fish and fish habitat, and WCT... ...simulations of future streamflow are considered highly uncertain and, therefore, conclusions drawn from analyses which relied upon these data should also be considered highly uncertain. This approach does not have the resolution to capture seasonal variation or to

⁷⁸ CIAR #542: PDF Page 254

⁷⁹ CIRA #542:PDF Page 254-256

understand what is occurring at the mesohabitat scale, which is the scale at which fish habitat assessments were performed.” (Emphasis added)

146. Timberwolf notes that DFO’s reference to monthly streamflow in its self is inadequate as instantaneous minimum (or maximum) flows are the flows that are going to limit fish.

147. With respect to the appropriateness of Benga’s assessment approach and methodology with respect to Benga’s predicted impacts to WCT, Timberwolf again agrees with and supports the following DFO statements :

“...the Proponent did not adequately characterize baseline conditions nor predict altered hydrologic conditions... .. additional concerns related to the approach taken by the Proponent to align hydrologic changes to fish life history processes... .. While habitat suitability curves (HSC) can be useful tools, they are an inherently coarse and simplistic representation of what occurs in the natural environment. These curves may not represent the full use of the habitat by individuals of the species, e.g., outliers, differing life stages. In the case of a species at risk, individual use becomes the scale at which we must measure. A second way in which these conceptualizations of habitat and their use by fish may be incomplete is the apparent exclusion of the contribution of adjacent, lower quality habitat to the higher quality habitat.

148. Further, Timberwolf notes that Benga’s hydrogeological groundwater modelling with respect to potential impacts on Gold Creek WCT and Benga’s definition of “no significant effect” is also subject to serious DFO criticism:

“In the context of a subpopulation of WCT that has been confined to the edge of its historical range, in a highly complex and variable hydrologic environment, a threshold of 10% change in instantaneous flows may not be an appropriate metric for a no residual effects determination, especially when uncertainty and limitations outlined here are considered. An assumption that a 10% change in average monthly flows will have no residual effect is even less conservative. This uncertainty is compounded further by the uncertainty in the way the average monthly flow changes were predicted. Further, Proponent appears to assume that only habitat loss (i.e. habitat that is no longer under water due to hydrologic alterations) should be accounted for. Complete habitat loss (destruction) and reduced functionality of habitat due to changes in the natural flow regime (harmful alteration) are two separate pathways that need to be considered. The Proponent has not accounted for all destruction of habitat not quantified harmful alteration associated with flow alterations. This has likely underestimated the scale of impacts to WCT.” (Emphasis Added)

149. Further, Timberwolf notes that Benga's hydrological modelling and sediment transport impacts on Gold Creek WCT are also subject to serious DFO criticism⁸⁰:

“Investigating flow regime changes using only peak flows that does not consider influences of the sedimentation ponds, how the moderate flow regime is impacted by the Project, and whether those potential changes impact the transport dynamics of sediment classes important to WCT. Geomorphic thresholds related to preferential habitat areas should be compared with the full flow regime for baseline, operational, end of mine, and long-term closure conditions to assess potential impacts of the project to WCT, critical habitat, and fish habitat. The effects assessment also does not consider potential impacts after mine closure when the water management plan is no longer implemented, but the sedimentation ponds and end pit lake will continue to alter hydrologic conditions relative to baseline conditions. Thus, long-term geomorphic and sediment transport impacts have not been addressed.”

150. Timberwolf believes that Benga's environmental assessment and its conclusions do not follow the precautionary principle, is not based on the best available science and current understanding of WCT and was not based on a rigorous and thorough. With respect to Benga's stated intention to destroy large areas of critical WCT habitat in Gold Creek, the DFO agrees with Timberwolf⁸¹:

“The Proponent's conclusions that removal of large areas of these habitat components will not yield a residual effect is not precautionary, is not aligned with post-impact findings throughout the literature, and was not based on an appropriate technical assessment.” (Emphasis Added)

And...

“The conclusion that is based on this rating system does not acknowledge the ecological context and sensitivity. WCT currently inhabit the edges of their range, generally at high elevations. subpopulations are isolated, and therefore do not have the ability to migrate to areas of higher quality habitat to carry out their life processes. The species and the habitat are both highly sensitive, and have limited resilience to change.” (Emphasis Added)

151. Benga is on the record that their proposed offsetting, including the creation of additional overwintering habitat, justifies their claim that their Proposed Mine will improve the situation for Gold Creek WCT⁸². Timberwolf submits there is insufficient

⁸⁰ CIRA#542: PDF Page 259

⁸¹ CIAR #542: PDF Page 262

⁸² Benga Final Argument, PDF Page 94, Paragraph 360

evidence on the record support Benga's proposal to create overwintering pools as an offsetting approach. Apparently DFO is of a similar view:

“Overwintering pools, and pool habitat in general, can be limiting factors in WCT productivity, supporting the concept proposed in the offsetting plan. However, the Proponent does not provide a geomorphic analysis of the feasibility of creating deeper overwintering pools, which leads to uncertainty as to whether they will be naturally maintained after initial establishment. Offsetting measures should be ecologically self-sustaining in the long term, and they should balance project impacts both spatially and temporally. Further, there is no analysis or discussion as to whether this type of in-stream manipulation could have up- or downstream impacts on stream morphology that may result in negative impacts to the habitat's capacity to support life history processes of WCT.” (Emphasis Added)

152. Benga has gone on at length about how their proposed offsetting will improve the conservation status of the WCT without providing any evidence to support their claim; in particular Benga has stated repeatedly that they would re-channelize Gold Creek to eliminate the section of channel braiding that periodically experiences an absence of surface flow. Timberwolf has serious doubts about Benga's proposal and apparently so does the DFO:[ref]

“The Proponent has not provided an assessment of why the channel is braiding, nor the sediment transport characteristics of the braiding channel. This leads to uncertainty as to whether constructing a single-channel in place of a naturally braided channel is likely to be self-sustaining in the long term. Further, the Proponent has not provided adequate baseline habitat data to indicate that this feature represents a barrier frequently enough that there would be genetic isolation implications for WCT, nor have they provided genetic data demonstrating this to be an existing issue. Therefore, DFO is uncertain if this habitat enhancement proposal will have the added benefits that are suggested by the Proponent.” (Emphasis Added)

153. Additional, during questioning by Timberwolf, DFO expert witnesses stated the following:

Q: ...do you think that Benga's evidence is sufficient and sufficiently robust to allow the Panel to make a determination about the likelihood of offsetting success and the risks associated with offsetting, and, in particular, whether or not the offsetting plan would be sufficient to compensate for the impacts on -- the known impacts -- the known, predicted impacts on westslope cutthroat trout in the Gold Creek and Blairmore Creek watersheds?

A: MS. Phalen: ...DFO is of the opinion that -- well, first of all, to say that it's up to the Panel to determine how much information they need to make a decision. I would add that DFO is of the opinion that the offsetting -- the scale or scope of the offsetting, as proposed to date, does not provide us with confidence [spelling] that the impacts they are proposing from the project will be covered and adequately offset by the current proposal.

154. Timberwolf submits that Benga has submitted no evidence that would suggest that their conceptual offsetting proposals will actually work. DFO came to the same conclusion:⁸³

“Based on the Project information provided to date, which includes large-scale habitat destruction including critical habitat, a high degree of uncertainty in multiple effects pathways predictions, and the conceptual nature of the proposed offsetting measures, DFO’s opinion is that counterbalancing residual effects with the goal of conservation and protection of fish and fish habitat, particularly WCT, will not be achieved. Further quantifying impacts based on the analysis presented here will require the Proponent to substantially increase the scale and scope of offsetting. The offsetting concepts currently proposed require substantial additional analysis in order to satisfy the offsetting policy and ensure their viability.” (Emphasis Added)

155. Timberwolf is concerned about the long term reclamation and closure of the Proposed Mine and notes that DFO shares these concerns

“A high degree of uncertainty remains with the closure landscape and the Proponent’s ability to effectively avoid further impacts to WCT due to the uncertainty with the characterization and prediction of effects detailed in this submission. Of note to DFO is the long-term management of the surge ponds post-closure to mitigate selenium effects, potential changes in groundwater discharge to Gold Creek (discussed further below), the end pit lake and any potential changes in flow to Blairmore and Gold Creeks, and recreational access.”⁸⁴ (Emphasis Added)

156. Timberwolf shares DFO’s broad concerns about the predicted permanent effect of Benga’s Proposed Mine on critically important groundwater flow:⁸⁵

“The above establishes that not only will the Project have a permanent and irreversible impact on the groundwater flow system within the LSA, but the

⁸³ CIAR #542: PDF Page 266-267

⁸⁴ CIAR #542: PDF Page 270

⁸⁵ CIAR #542: PDF Page 271

alteration of the groundwater flow system will have a corresponding permanent impact on the baseflow regime of the adjacent Blairmore and Gold Creeks.

And...

Groundwater influx is critical to maintaining WCT in Blairmore and Gold Creeks as it not only provides the physical medium that fish need to live, it also provides important thermal regulation during summer and winter. The importance of providing thermal refuge during summer is well documented... ..and has been identified as critical to the survival of fish throughout the winter.”

157. In particular, Timberwolf is concerned about who will take responsibility for the ongoing mitigation of groundwater impacts Benga's Proposed Mine will cause. Other than conceptual ideas Benga has not provided any detailed explanation as to how they will manage the permanent need to mitigation reductions in baseflow.
158. Following from the previous paragraph, Benga has stated on the record⁸⁶ of this proceeding that it is reluctant to be financial responsible for future mitigation costs relating to groundwater impacts to the SARA protected WCT in Gold Creek.
159. Timberwolf submits that practically, if the Proposed Mine is approved, constructed and operated, and if the SARA protected Gold Creek WCT sub-population actually survives 40 years into the future to mine closure, once Benga has finished the reclamation and received their Mine Bond back, they, like any other corporation, will disappear and leave dealing with any “unforeseen” impacts to WCT resulting from low groundwater flows into Gold Creek to future governments, at the expense of future taxpayers. In reality what will likely happen with that not-so hypothetical event is that the Gold Creek WCT population will “wink out” and be lost forever.
160. Timberwolf also shares DFOs expressed concerns with the poor quality of Benga's cumulative effects analysis. Timberwolf highly recommends the Panel read the entire DFO critique of Benga's cumulative effects assessment, but provides the following excerpt to get a sense of Timberwolf and DFO concerns:

⁸⁶ CIAR #866:5 to 3876:15

“Overall, the cumulative effects assessment does not have a quantitative basis and carries forward and compounds assumptions, gaps and uncertainties that DFO has identified in related effects analyses of the Project. The sensitivity of WCT and the risk to WCT associated with erroneous analyses necessitates a precautionary approach. Due to these fundamental gaps and the other limitations detailed here, the characterization of the potential cumulative effects on WCT are likely inaccurate and the effects underestimated.” (Emphasis Added)

161. Ironically, in its final argument Benga refers to⁸⁷ “...multiple activities and land uses that cause adverse effects on WSCT...” and then goes on to list a number of activities that are known to cumulatively impact WCT habitat. But Benga had inexplicitly dropped consideration of those land use activities from its cumulative effects assessment. As a result there is no, or alternatively, deficient information on the record with respect to cumulative effects on the SARA protected WCT that will be affected by Benga’s Proposed Coal Mine.
162. DFO makes a series of important and highly critical conclusions about Benga’s, and their consultants, work with respect to fishes, fish habitat and the SARA protect WCT in Gold Creek. Timberwolf presents selected abbreviated excerpts here⁸⁸:

“The proposed Grassy Mountain Coal Project will result in the destruction or alteration of large amounts of aquatic and riparian habitat in Blairmore and Gold Creeks. Habitat impacted in Gold Creek is designated critical habitat required for the survival and recovery of threatened WCT, while the habitat in Blairmore Creek supports a near-pure population of WCT. The recovery of near-pure populations of WCT supports the population and distribution objectives identified in the RS-AP required to recover the species. While the Proponent has provided an analysis of the effects to fish and fish habitat from blasting activities, changes in water temperature, change in food supply, changes in hydrology, changes to sediment supply and transport, and direct loss of aquatic and riparian habitat, DFO has identified significant limitations, gaps, and uncertainties with the assumptions and modelling used to derive the predictions and consequently, the identification of residual effects to WCT. Additionally, the approach to the assessment of effects was not in line with the precautionary principle and did not reflect the sensitivity of the species at risk. Given these factors, the Proponent has likely significantly underestimated the impacts to WCT.” (Emphasis added)

And...

⁸⁷ Benga Final Argument: PDF Page 93: Paragraph 355

⁸⁸ CIRA # 542: 280

The Project will result in impacts to fish and fish habitat that cannot be mitigated. (Emphasis added)

And...

“...counterbalancing residual effects with the goal of conservation and protection of fish and fish habitat, particularly WCT, will not be achieved. (Emphasis added)

And...

“...the Proponent would be required to demonstrate functional habitat that protects the valuable genetics of the populations prior to impacts. The Proponent’s current proposal does not include offsetting that is proven fully functional prior to impacts.”⁸⁹ (Emphasis added)

And...

DFO disagrees with the [Benga’s] assessment that it will have a positive effect on WCT, supporting recovery and persistence beyond the current baseline. (Emphasis added)

163. Timberwolf notes that there is evidence on the record of this proceeding that the Gold Creek WCT sub-population is critically important to achieving the overall population goals contained in the Recovery Plan. DFO states the following⁶⁵:

“Currently, insufficient critical habitat has been identified in the RS-AP to fully achieve the population and distribution objectives for WCT. The isolated nature of the pure-strain populations of WCT means that risk to a given population equates to risk to the population as a whole. (Emphasis added)

164. Finally, DFO importantly concluded⁹⁰:

“Based on these factors and the information available to date, it is unlikely that the subsection 73(3) preconditions can be met for the Project. In addition, DFO is of the opinion that the Project has the potential to result in significant adverse effects to the aquatic ecology valued component, WCT.”

165. Timberwolf submits that it’s noteworthy that a no time during the proceeding did Benga contest or challenge the veracity of any of the numerous DFO conclusions contained in their September submission to the Panel.

⁸⁹ Note: Benga has refused to consider doing this. See Paragraph ?? in this document.

⁹⁰ CIAR #542: PDF Page 282

166. Benga did cross examine the DFO expert panel and during that cross examination asked no questions or challenged any of the critical comments contained in the DFO submission⁹¹.
167. Benga's final argument was another opportunity to rebut DFO's evidence on the record of this Proceeding but they did not do so. With the exception of comments about the different DFO staff had been assigned to the Benga file over the past few years⁹², Benga placed no evidence on the record to refute any of the many substantive DFO criticisms about the flaws and limitations in Benga's environmental assessment as it related to the SARA protected WCT⁹³.
168. The DFO evidence with respect to the numerous flaws and limitations in Benga's environmental assessment methodology and results remains uncontested in this Proceeding, in spite of Benga having numerous opportunities to do so. As such the Panel ought to give the DFO evidence considerable weight in their deliberations about whether Benga's environmental assessment with respect to the Gold Creek SARA protected WCT in front of this Panel is sufficient to support a recommendation to the Minister to approve the Proposed Mine. Timberwolf submits that it is not.

COMMENTS ON BENGA'S FINAL ARGUMENTS

169. At paragraph 29, PDF page 13 of Benga's final argument, Hayduke submits that Benga has misconstrued the role of public participation in the EA process and the role of the early stages of the process. The hearing stage is intended to test Benga's evidence, present evidence support a particular participant's viewpoint and to have the opportunity to present argument. Timberwolf submits that is what has happened.

⁹¹ CIAR #891: 4734:10 to 4754:1

⁹² Benga Final Argument PDF Pages 100-102, Paragraphs 386-392

⁹³ Benga Final Argument PDF Page 100 to 104

170. At paragraph 53, PDF page 18 of Benga's final argument, Timberwolf submits, as previously argued in paragraphs 13 through 55 both DFO and Benga's interpretation of SARA section 73, and specifically the interpretation of the term "incidental" is inconsistent with the purpose of SARA and therefore unlawful.
171. Notwithstanding the preceding paragraph, at paragraph 54, PDF page 19 of Benga's final argument, Timberwolf submits that Benga has failed to consider all reasonable alternatives, there is no evidence on the record of this Proceeding that support the conclusion that Benga's proposed conceptual mitigation or compensation plans will in fact minimize the impacts to an acceptable degree, and there is evidence in this proceeding that the activity will jeopardize the survival or recovery of the species, specifically the WCT.
172. At paragraph 56, PDF page 20 of Benga's final argument, Benga argues that there are many precedents for issuing SARA section 73 permits even when there will be a negative effect on an endangered species or their habitats. Timberwolf submits that most of those section 73 permits, particularly those for large industrial projects like Benga's proposed Mine, were likely unlawful. And while Timberwolf understands that the Panel is not the authority that would or would not issue a section 73 permit that would allow Benga to construct and operate the Proposed Mine, Timberwolf respectfully submits that the Panel must consider the likelihood of Benga receiving that Section 73 permit and the potential harm to SARA protected WCT in Gold Creek as part of their deliberation on whether to recommend or not recommend that the project receive approval from the Minister.
173. At paragraph 58, PDF page 21 of Benga's final argument, Benga asserts that the EA process for the Grassy Mountain Project has been rigorous, comprehensive, transparent, and complete. To the contrary, Timberwolf submits that the entire record in this proceeding demonstrates that the evidence Benga has relied on in has been logically and scientifically flawed, generalized (Mr. Bettles' word), complex and disorganized, and incomplete. Benga can assert otherwise but Timberwolf submits that the record does not support Benga's view.

174. At paragraph 205, PDF page 56 of Benga's final argument, Benga conveniently cherry picks quotes from the transcript where Mr. Sawyer is questioning Dr. Plouffe (NRCan witness) with respect to seismicity concerns. A more fulsome read of the transcript indicates that Mr. Sawyer was asking if and how Dr. Plouffe's expert opinion was informed by the threatened WCT to which Dr. Plouffe replied:

"As for fish habitat, it is clearly outside of my field of expertise, so this was not part of my evaluation."⁹⁴.

175. Mr. Sawyer's continued questioning of Dr. Plouffe established that Dr. Plouffe's testimony with respect to his being satisfied with Benga's analysis was devoid of any consideration of the potential impact of landslides in the Benga study area on SARA protected WSC. The entire exchange is presented verbatim below⁹⁵:

Q: In doing your assessment, in terms of landslide susceptibility, is one of the factors you consider what the risks are and, therefore, what the consequences of a failure are, if it was to happen?

A: Of course. The evaluation of the landslide susceptibility was based on the number of criteria that -- that is, the -- the slope, the sediment thickness, the amount of precipitation, the historical record within the area, the criteria that I presented in my presentation. Those are the main factors that were taken into consideration for the mapping of the susceptibility of the landslide within the area.

Q: Okay. So I would be correct, sir, in assuming that you did not consider the consequence of a landslide on the Species at Risk Act-listed westslope cutthroat trout?

A: That's correct.

176. Timberwolf respectfully submits that it is no surprise that Benga truncated Mr. Sawyer's questioning of Dr. Plouffe because the full exchange demonstrates that both Benga's and Dr. Plouffe's analysis did not consider the potential consequence of a Benga induced landslide on SARA protected WCT in Gold Creek.

⁹⁴ CIAR #804 at 2223:20-22.

⁹⁵ CIAR #804 at 2223-2224:26-16.

177. At paragraphs 358 and 359, PDF Page 94 of Benga's final argument, Benga states "Mr. Sawyer appeared to insinuate that Gold Creek's FSI score of less than 1 is a good thing, when comparing it to the FSI scores for WSCT populations in other locations". With all due respect, Timberwolf submits that Benga has missed the point.
178. The Alberta Fish Suitability Index is a metric used to provide a rough estimate the conservation status of various fish stocks on a scale of 1 to 5 (1 being high risk and 5 being low risk). The fact is that Gold Creek has an FSI score of 0.8 which implies that the Gold Creek fish stocks, including the SARA protected WCT, are at high risk of being extirpated. A very low FSI score for Gold Creek shouldn't be a surprise to anyone because the WCT in Gold Creek are, in fact, at high risk of extirpation. That is exactly why they are listed and legally protected under the SARA.
179. If Benga had not just cherry picked the record to support their argument they would have seen that Mr. Sawyers point in questioning Mr. Bettles was that while the Gold Creek FSI score was very low it is in fact much higher than the mean FSI score for all other Alberta watersheds than contain threatened WCT. Timberwolf submits that the point is that the Gold Creek sub-population of threatened WCT may be one of the most secure sub-populations in the entire population. While not a good thing, the Gold Creek WCT are threatened after all, the Gold Creek WCT are critically important to the protection and recovery of the species as whole simply because they are one of the most secure of largely insecure sub-populations.
180. Timberwolf also disagrees with Benga's characterization of Gold Creek being "not good habitat. The fact is that WCT have existing in Gold Creek for possibly thousands of years and have adapted very well to the seemingly harsh ecological conditions of a high mountain headwater stream. The fact that WCT are threatened is not because Gold Creek is "not good habit" as Benga asserts: it is largely because of over 120 years of cumulative anthropogenic impacts including chronic and ongoing habitat degradation.

181. Following from the previous paragraph Timberwolf needs to once again point out the stark difference between Benga's, and Mr. Bettles' efforts and results, at characterizing the "quality of WCT habitat in Gold Creek (and Blairmore and Daisy Creeks) in comparison to the work of Benson 2019 who found, recorded and studied over 25 times more potential overwintering pools than did Benga.
182. Timberwolf has reflected on why Benga would focus on the Gold Creek WCT being in poor shape and occupying, in their words, "not good habitat". One would think that the threatened and legally protected WCT ought to be subject to more protect and not less. So why would Benga keep focusing on the vulnerabilities of this particular fish stock?
183. While speculative, Timberwolf believes that Benga's strategy, knowing that their Proposed Mine cannot be constructed or operated without destroying critical WCT critical habitat and knowing that they cannot legally do that without a SARA section 73 permit (even then it's doubtful it will be legal) , is to emphasize that the flaws in the Gold Creek WCT habitat and to emphasize how their conceptual offsets will rectify all those problems, thereby creating a justification for their receiving a section 73 permit and the approval for their Proposed Mine. Timberwolf urges the Panel to be alive to this tactical possibility in its deliberations with respect to Benga's Proposed Mine
184. Again, while speculative, Timberwolf suggests that if the Panel considers the findings of Benson 2019 we might come to an entirely different conclusion than Benga has. We might conclude that the threatened Gold Creek WCT are in fact doing quite well in habitat they have evolved in for hundreds, if not thousands of years, in spite of over 100 years of anthropogenic impacts. Timberwolf submits that approving the Benga Proposed Mine would be the latest, and possibly the greatest, impact to this threatened and legally protect fish population that will likely push them into extinction.
185. At paragraph 375, PDF page 97-98, of Benga's final argument, Benga correctly concluded that the Panel is not charged with making a section 73 permit determination at this hearing. However, Timberwolf submits that it would be incorrect and

inconsistent with the mandatory requirements of SARA section 79 to suggest that the Panel should not put its mind to whether Benga would likely receive a section 73 permit if and when it applies for one.

186. Timberwolf submits that the Panel must consider the full record of these Proceedings, weight the evidence, and arrive at a conclusion on whether the Benga's Proposed Mine will have significant environmental consequences on, for example, the SARA protected WCT and if it's in the public interest. In order to arrive at a conclusion the Panel must consider the question of the section 73 permit even though they are not charged with making that decision.
187. As previously noted at Paragraph 145 of this submission, DFO, in its submission to this Panel, indicated that in its view, "...it is unlikely that the subsection 73(3) preconditions can be met for the Project."⁹⁶
188. Timberwolf reiterates that the DFO evidence is uncontested in this proceeding; notwithstanding that Benga has had several opportunities to do so. Therefore, Timberwolf submits that the Panel should give the DFO evidence significant weight in its deliberations.
189. At paragraph 376, PDF page 98 Benga summarized examples of where Section 73 permits have been issued for activities "relating to Alberta coal mines, pipelines, hydroelectric generations facilities, electricity transmission, and stream alterations". Timberwolf notes that none of these authorizations are with respect to SARA protected WCT.
190. Additionally, Benga contention that section 73 permits have been issued for Alberta coal mines is, at best, misleading. Timberwolf, questioned DFO expert witnesses with respect to this matter and elicited the following response:

⁹⁶ CIAR #542: PDF Page 282

Q: ...With respect to a Species at Risk Act Section 73 authorization, does DFO have any examples of a authorization being given for a coal-mining project?

A: MS. PHALEN: ...Panel Members, we are not aware of any permits for the destruction of critical habitat associated with the coal mine. Within our regulatory scheme, what we are aware of are permits that we have issued to allow for the harm, harass, capture of -- of species-at-risk individuals in order to allow -- or incidental to baseline sampling associated with coal mines in our region.
(Emphasis Added)

191. Based on the foregoing response from DFO it would appear Benga is incorrect in its assertion that section 73 permits have been issued for the construction and operation of any coal mine, let alone one the scale of Benga's Proposed Mine.
192. At paragraph 428, PDF page 110, of Benga's final argument, Benga accuses Timberwolf's expert, Mr. Mayhood, of a "conflict of interest," apparently as a result of being a director and former president of Timberwolf Wilderness Society, so that his ability to provide accurate, objective, and independent advice is "impeded." No valid evidence of actual inaccuracy, actual lack of objectivity, and actual lack of independence were provided, as discussed below.
193. Furthermore, Mr. Mayhood is a dedicated and respected fisheries scientist with over 50 years of professional practice and dozens of independent and client reports to his credit. For Benga to impugn his professionalism is highly ironic when they themselves need to pay "professional" biologists to support their Proposed Mine. So who really is in a conflict of interest here?
194. Timberwolf, as a matter of policy, and Mr. Mayhood, both take their positions based on evidence, including evidence provided by Benga and its consultants. Mr. Mayhood's report and presentation cited abundant evidence in support of the conclusions presented therein. If Benga has evidence tending to contradict that evidence and those conclusions, it should present it. It has not done so.

195. At paragraph 429, PDF page 110, of Benga's final argument, Benga erroneously asserts that the content of Mr. Mayhood's evidence fails in some respects to reflect a truly objective assessment, because, firstly, he failed to engage in a review of Benga's proposed mitigations.
196. Contrary to Benga's assertion, Mr. Mayhood did consider, and dismissed Benga's mitigation proposals and offsets because they are irrelevant to the problem. The problem is that Benga's Proposed Mine, as presented in this Proceeding, will inevitably and unavoidably destroy critical habitat for a designated threatened population of WCT, protected under the federal SARA section 58(1). As previously argued, under that section, no part of designated critical habitat may be destroyed.
197. Water is a part of critical habitat; trout cannot live without it. Benga's evidence, in the form of its water management design, is that it will transfer water destined for Gold Creek to Blairmore Creek, permanently reducing flows in Gold Creek, especially baseflows, which form virtually all of the flow in winter, and which are critically low already in Gold Creek. There has been no evidence presented to demonstrate how Benga will replace that lost water. This is not an opinion, it is an acknowledged fact offered by Benga in its own evidence. That loss of water to Gold Creek is destruction of some part of critical habitat, again contrary to SARA section 58(1).
198. Secondly at 429, Benga erroneously asserts that "Mr. Mayhood failed to review available literature on the topics of salmonid habitat offsetting and habitat restoration to inform his opinion on Benga's proposals before drafting his report." Mr. Mayhood in fact cited relevant literature sufficient to deal with Benga's claims, showing the high frequency of failure of habitat offsets. Little if any of that relevant literature he cited was considered by Benga in its habitat offsetting proposals, nor were the problems revealed by that literature addressed.
199. Recall again that destruction of critical habitat is an inevitable and unavoidable result of Benga's proposed mine. Critical habitat offsetting is not available under SARA. Critical habitat is by definition under SARA s.2(1) "habitat that is necessary for the

survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species" [emphasis added]. The critical habitat has been identified in the recovery strategy and action plan (DFO 2019), and has the force of law. Specifically, Gold Creek and its named and unnamed tributaries are designated critical habitat by the current recovery strategy and action plan. A part of that critical habitat will be destroyed by Benga's mine, inevitably and unavoidably, according to Benga's own evidence. Neither Benga nor DFO can just invent new replacement critical habitat to offset that which will be destroyed, because it's not identified in the recovery strategy or action plan, and because there is no plan to replace the water removed.

200. Nevertheless, Mr. Mayhood in fact is well aware of the many failures and relatively few successes of salmonid habitat offsetting and habitat restoration attempts from his decades of experience monitoring streams holding many examples of habitat manipulations on the southern east slopes of the Rocky Mountains. A sample of the most relevant information for southwestern Alberta was cited in his report (Mayhood 2020:18-20). In particular, Pattenden et al. (1998, cited by Mayhood in his written evidence) provides key evidence of the inadequacy and high failure rate of instream structures similar to those proposed by Benga as habitat offsetting designs in southwestern Alberta streams. One of the authors, Lorne Fitch, offered extensive evidence to the Panel, elaborating at length on the many problems of these structures that render them unreliable for long-term habitat offsets in this region. Benga did not consider that highly relevant evidence at all in its proposed offsets, nor did it address the concerns raised by that work.

201. At paragraph 430, PDF page 110, of Benga's final argument, Benga discusses an image in Mr. Mayhood's presentation showing many small water channels on the eastern slope of Grassy Mountain that he had labelled critical habitat. Benga asserts that under cross-examination, "Mr. Mayhood clarified that these red arrows he drew do not in fact set out locations of confirmed WSCT critical habitat. He acknowledged that there has been no identification of the biophysical functions, features, or attributes for any WSCT life stages described in the RS-AP at any of those locations." This account,

based on Benga's interpretation of answers to incomplete and highly selective questioning, covers only a small part of what constitutes critical habitat.

202. What constitutes critical habitat under SARA is that identified as critical habitat in a recovery strategy or action plan (SARA s.2(1)). These many small channels are in fact described as critical habitat by the most recent recovery strategy and action plan. They are considered critical habitat because water and materials within the channels upstream influence the quality of the habitat downstream, at critical habitat sites actually occupied by the trout. The Proposed Mine, according to Benga's evidence, will remove the actual land drained by these channels as a necessity for removing the coal and shipping it away. By its very nature, the mining must destroy that critical habitat; it is unavoidable. Again, that would contravene SARA section 58(1).

203. Benga must obtain a permit under SARA section 73(2)(c) to destroy critical habitat to allow it to offset that habitat. Its ability to obtain such a permit is not legally possible. Such permits may only be issued if (SARA s.73(2))

“(a) the activity is scientific research relating to the conservation of the species and conducted by qualified persons;

(b) the activity benefits the species or is required to enhance its chance of survival in the wild; or

(c) affecting the species is incidental to the carrying out of the activity.”

204. A surface coal mine is not scientific research, does not benefit the species, is not required to enhance the listed species chance of survival, and most significantly, critical habitat destruction is not incidental to the carrying out of the activity. Surface coal mining is, of its essence, destruction of critical habitat in this case. Surface coal mining at Grassy Mountain inevitably and unavoidably will destroy critical habitat as a direct, essential result of Benga's surface mining. There is no provision for offsetting critical habitat in SARA precisely because critical habitat is “habitat that is necessary for the survival or recovery of” a listed species (SARA s.2(1)). It can't be replaced, by

definition. These reasons are why the details of how Benga intends to replace or offset critical habitat are irrelevant.

205. At paragraph 431, PDF page 111, of Benga's final argument, Benga takes exception to Mr. Mayhood's characterization that Benga's mine is the greatest threat to Gold Creek's cutthroat population. Instead, it asserts that the mine project could reverse the local population's downward trajectory.
206. Benga's claim is refuted by its own evidence. To repeat, Benga's evidence is that the mine will dig up the channel habitat and will cut off a large proportion of water habitat, both of which are necessary for the survival or recovery of the species (its critical habitat, SARA (2)(1)). Benga's evidence that it will offset that destroyed habitat with new habitat (i.e., to replace habitat that is irreplaceable by definition), and that it will not replace a crucial portion of that critical habitat that will have been removed (water), contradicts its claim.
207. At paragraph 432, PDF page 111, of Benga's final argument, Benga asserts that Mr. Mayhood is not a lawyer and is not qualified to give legal opinion as to the correct interpretation and application of SARA. Benga claims his evidence in this regard should be given no weight.
208. To the contrary, Timberwolf believes Mr. Mayhood is well qualified to provide expert opinion on SARA and its application. SARA is a species conservation document with legal force that was clearly developed in cooperation with experts in conservation biology, provides statutory structure for the biological processes required for species recovery, and relies heavily on scientific documents such as COSEWIC scientific assessments, recovery strategies, and action plans, to support its legal elements. Some of Mr. Mayhood's reports and publications were used to develop and support the recovery strategy and action plan, and the COSEWIC assessments for westslope cutthroat trout (Alberta population). These ancillary biological documents have legal force under SARA. Mr. Mayhood's expertise in these areas is documented at length in

his CV, in his published and unpublished papers and reports listed therein, and in his documents cited in his written submission.

209. At paragraph 533, PDF page 136, of Benga's final argument, Benga asserts "that there is no credible evidence that this Project will have significant adverse environmental effects." Timberwolf rejects that assertion as a feeble last ditch attempt by Benga to plump-up an application that is so wrought with flaws, bad science, ignoring issues, missing data, and numerous repeated attempts to pass off significant environmental effects as insignificant. To the contrary, Timberwolf respectfully submits that the body of evidence in this proceeding overwhelmingly demonstrates that Benga's Proposed Mine will have permanent and significant environmental effects and that Benga has failed to satisfy their onus to demonstrate that their project is in the Public Interest.

SUPPORT FOR OTHER PARTIES OPPOSING THE PROPOSED MINE

210. Timberwolf would again remind the Panel that Timberwolf's limited intervention should not be misconstrued as a lack of concern about other topic areas or lack of support for the interventions and final arguments of other parties opposing the project.
211. Further, Timberwolf explicitly supports and adopts the written arguments of the MD of Ranchland No. 66, Canadian Parks and Wilderness, Southern Alberta Chapter, the Coalition of Alberta Wilderness Association, Grassy Mountain Group Berdina Farms Ltd., Donkersgoed Feeder Limited, Sun Cured Alfalfa Cubes Inc., and Vern Emard, the Livingstone Landowners Group.
212. In particular, Timberwolf lends its support to the testimony and long-term angling evidence of Mr. Jim Rennie. It constitutes excellent monitoring evidence tending to show that the sudden recent decline in the Gold Creek WCT population was very likely caused by Benga's drilling activities. Benga now argues that only by approving its

mine and putting in place its habitat offsets can the population be recovered. Benga is likely responsible for the precipitous decline and Timberwolf believes that if the event had been properly investigated Benga would have been charged, and restitution should have involved an order for hefty long-term funding to recover the stock, whether or not the mine is approved.

SUMMARY OF KEY ARGUMENTS

213. The preponderance of evidence on the Record supports the conclusion that the Proposed Mine is not in the Public Interest.
214. With respect to the issue of the threatened WCT, if Benga were to construct and operate the Proposed Mine as currently proposed it would be contrary to law.
215. The onus is entirely on Benga and it has failed to discharge its responsibility to prove, based on the preponderance of the evidence, that its Proposed Mine is in the Public Interest.
216. Benga's Proposed Mine will result in the killing, harming, harassing, capture or taking of SARA protected WCT or its critical habitat.
217. Benga and DFOs interpretation of section 73(2)(c) is inconsistent with SARA and thus unlawful in that it allows industrial development will harm listed endangered or threatened species and their critical habitat.
218. Offsets in a section 73(3) (c) determinations are fundamentally inconsistent with the meaning of critical habitat and the purpose of SARA to protect listed endangered or threatened species and their critical habitat and are therefore unlawful.
219. Successful offsets are very rare, have a low success rate and are very risky for species listed under SARA.

220. Benga will require a section 73 permit to construct and operate its mine which will be unlawful.
221. Benga has not complied with the mandatory requirements of section 19(1)(a), (b) and (c) of the CEAA 2012 and therefore not in compliance with CEAA 2012 or the Panel Terms of Reference.
222. Benga's will unlawfully destroy the critical habitat of the SARA protected WCT.
223. Benga retained consultants with limited local knowledge, lack of experience with the SARA protect WCT and who practice poor science and produced generalized and inadequate results.
224. Benga's environmental assessment lacked scientific rigour, did not use appropriate research methods, did not incorporate relevant scientific knowledge, did not address scientific certainty, or lack thereof, and generally was inadequate for dealing with very sensitives threatened species such as WCT.
225. Benga confirmed groundwater upwelling was critical to the survival of the WCT but failed to properly account for the impact of their Proposed Mine dewatering on the WCT in Gold Creek.
226. Benga confirmed that WCT young-of-the-year juvenile cohort is a critical factor of WCT population dynamics that affect their viability and conservation status but was unable to find a single WCT young-of-the year or early juvenile trout (<20 cm) in length while another researcher was able to find 253 sites that contained young-of-the year or early juvenile trout (<20 cm) in the same area where Benga's found none.
227. Benga confirmed that movement corridors are critical to WCT in Gold Creek, particularly in winter and low flow conditions but made no effort to document to critical WCT habitat component.

228. Even though the WCT Recovery Plan was released in December 2019, 10 months later Benga had not updated its environmental assessment to accurately reflect legally protected critical WCT habitat.
229. Benga confirmed that it believed the precautionary principle should be the dominant principle the Panel should apply in its decision-making with respect to effects of the Proposed Mine on SARA protected WCT.
230. Benga also confirmed that where critical habitat was irreplaceable offsetting would be inappropriate.
231. Benga confirmed that it understands that the Panel decision with respect to Benga's Proposed Mine must be made based on the evidence on the record of this proceeding rather than information that might come in the future.
232. DFO's submission was highly critical of the Benga environmental assessment with respect to the SARA protected WCT.
233. DFO submitted that offsets must contribute to the attainment of population and distribution objectives described in the recovery strategy or action plan for the affected species. Timberwolf argues there is no evidence on the Record to support that conclusion with respect to Benga's conceptual offset plans.
234. DFO submitted that proposed offsetting should be implemented and confirmed functioning prior to impacts occurring but Benga has rejected that as untenable.
235. Groundwater upwelling is a critical, maybe most important, habitat component for the Gold Creek WCT. Benga's groundwater/hydrology assessment was generalized, had high level of uncertainty, used a model with limited predictive power and low resolution, and was incapable of the level of rigours analysis warranted by the groundwater dependant SARA protected WCT.
236. Notwithstanding the previous point, Benga's groundwater/hydrology assessment did predict up to a 20 percent reduction in groundwater flows into Gold Creek at critical

times of the year. Timberwolf submits Benga's results understate the full extent and magnitude of the impacts of the Proposed Mine on groundwater and ultimately on WCT.

237. Benga has gone on at length about how their proposed offsetting will improve the conservation status of the WCT without providing any evidence to support their claim;
238. Benga is reluctant to take permanent financial responsibility for the mitigation and offset strategies they have proposed.
239. Benga's cumulative effects assessment was poorly done, selectively narrowed in scope and of little or no utility in understanding the cumulative impact of the Proposed Mine in combination with other anthropogenic and non-anthropogenic stressors.
240. DFO identified significant limitations, gaps, and uncertainties with the assumptions and modelling used to derive the predictions and consequently, the identification of residual effects to WCT. Additionally, the approach to the assessment of effects was not in line with the precautionary principle and did not reflect the sensitivity of the species at risk. Given these factors, DFO believes the Proponent has likely significantly underestimated the impacts to WCT.
241. DFO also concluded that Benga's Proposed Mine will result in impacts to fish and fish habitat that cannot be mitigated.
242. DFO also concluded counterbalancing residual effects with the goal of conservation and protection of fish and fish habitat, particularly WCT, will not be achieved.
243. DFO also concluded that Benga's current proposal does not include offsetting that is proven fully functional prior to impacts
244. DFO disagrees that Benga's offsetting and mitigation plans will have a positive net effect on WCT, supporting recovery and persistence beyond the current baseline.

245. DFO concluded it is unlikely that the subsection 73(3) preconditions can be met for Benga's Proposed Mine and DFO is of the opinion that the Project has the potential to result in significant adverse effects on WCT.
246. Timberwolf observed that in spite of opportunities in the hearing process to counter the DFO's highly critical critic of Benga's environmental assessment they did not do that, The result is that DFO's expert testimony remains uncontested on the record.
247. Benga was critical of the objectivity of Timberwolf's expert witness, Mr. David Mayhood. Mr. Mayhood has many decades of distinguished fisheries research behind him and is credible, dedicated fisheries scientist with a specific interest and specialization in SARA threatened WCT.

CONCLUSION

248. Having reviewed the record of this Proceeding and having regard to the preceding paragraphs in this its argument, Timberwolf submits that the Panel can only conclude that Benga, and its consultants, have failed to achieve the most basic standard of quality, scientific rigour and evidence necessary to support their case, let alone meet the preponderance of evidence standard required to satisfy their onus.
249. Timberwolf submits that in this instance, where Benga, the proponent of the Proposed Mine, readily admits that the Proposed Mine will destroy critical habitat of SARA protected WCT in Gold Creek, one would assume that because of the heightened ecological, legal and even moral context of the Proposed Mine threatening an important SARA protected WCT sub-population, that Benga and its consultants would have pulled out all of the stops and done what Mr. Bettles referred to as detailed studies (in describing the work of Benson 2019). Instead, Benga and its consultant did what Mr. Bettles described as [his] generalized studies. Given the conservation status of the Gold Creek WCT, the provisions of SARA, the direction contain in the WCT Recovery Plan, the uncontested fact that Benga's Proposed Mine will destroy critical habitat and that Benga has proposed conceptual offsetting measures based on limited

knowledge, bad science and what can only be described in Bettles' own words as "generalized" studies is collectively, clear and unequivocal evidence that Benga has failed to meet its onus. On these grounds alone Timberwolf submits that Benga has not demonstrated that approving the Proposed Mine is in the Public Interest.

250. Additionally, Timberwolf respectfully submits that should the Panel decide to approve the Benga Proposed Mine that it must do so in a manner that is consistent with Section 79(2) of the SARA and with the Westslope Cutthroat Trout Recovery Strategy and Action Plan for the Westslope Cutthroat Trout.
251. To be consistent with the Westslope Cutthroat Trout Recovery Strategy and Action Plan, the Panel must ensure that any approval conditions, including mitigation or offsetting, must protect and maintain the existing distribution of genetically pure populations of WCT and the contribute to the re-establishment of genetically pure populations to self-sustaining levels, within the species' original distribution, which in this case, would include Blairmore Creek.
252. Timberwolf respectfully submits that the Panel ought to pay very close attention to the submission of the DFO in these proceedings. In addition to being a responsible authority under CEAA 2012, DFO is also the Government of Canada regulator with respect to the *Fisheries Act* and the SARA as it relates to aquatic species, including the Gold Creek WCT.
253. DFO's review of the Benga application, in short, concluded that Benga's application is unlikely to meet subsection 73(3) preconditions and therefore unlikely to receive a section 73 permit, a necessary condition for the Proposed Mine to be constructed and operated, and that Proposed Mine has the potential to result in significant adverse effects to the SARA protected WCT in Gold Creek.
254. Timberwolf submits that there is no credible evidence on the record of these proceeding that Benga's Proposed Mine will not result in the destruction of protected

critical habitat or that Benga's proposed conceptual mitigation and offsetting strategies will be effective and succeed.

255. On the contrary there is abundant evidence on the record that the Proposed Mine cannot be approved, constructed and operated without very significant and likely irreversible impacts on the SARA protected WCT.
256. Timberwolf respectfully submits that if the Proposed Mine is approved and constructed it will be the death knell for the Gold Creek WCT which would make a mockery out of the SARA and the principles that Act stands for.
257. In light of all the evidence on the record in this proceeding, the legal requirements of SARA and the CEAA 2012, and the considered submission of the DFO, Timberwolf respectfully submits there is only one choice before this Panel.
258. Timberwolf respectfully requests that the Panel find that Benga's Proposed Mine is not in the Public Interest and to make its recommendation to the Minister that it not receive approval as per section 52 of CEAA 2012.

Submitted January 8th, 2021