

GENERATION PGM

May 18, 2022

Via E-Mail

Joint Review Panel
Impact Assessment Agency of Canada
160 Elgin Street, 22nd Floor
Ottawa, ON K1A 0H3

Attention: Debra Sikora
Panel Chair, Marathon Palladium Project

Dear Ms. Sikora:

**Re: Generation PGM ("GenPGM") Marathon Palladium Project ("Project")
Written Closing Remarks**

GenPGM hereby submits its written Closing Remarks in accordance with the Joint Review Panel's directions issued on April 14, 2022 ([CIAR #1273](#)) and May 12, 2022 ([CIAR #1278](#)) ("**Process Directions**"). In accordance with the Panel's Process Directions, GenPGM also notes its intention to provide reply Closing Remarks on May 19, 2022 at 2:00PM ET.

Yours truly,

GENERATION PGM INC.
<Original signed by>

Jeremy Dart
Environmental Manager

**Joint Review Panel
Impact Assessment Agency of Canada
Reference No. 54755**

MARATHON PALLADIUM PROJECT

CLOSING REMARKS OF GENERATION PGM INC.

May 18, 2022

To: Debra Sikora
Panel Chair, Marathon Palladium Project
Joint Review Panel
Impact Assessment Agency of Canada
160 Elgin Street, 22nd Floor
Ottawa, ON K1A 0H3

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1. EXECUTIVE SUMMARY

1. Generation PGM Inc. ("**GenPGM**" or "**Proponent**") has proposed a new platinum group metals ("**PGM**") and copper open pit mine and milling operation approximately 10 kilometres north of the Town of Marathon, Ontario ("**Project**"). The Project stands to bring much needed economic benefits to local and regional communities and Indigenous groups without any significant long-term adverse effects on the natural and socio-economic environments.
2. Over 11 years of assessment, GenPGM and its predecessors have consistently demonstrated a commitment to environmental protection, even volunteering to be subjected to Ontario's environmental assessment process in order to harmonize the assessment process between the federal government, ensure a fulsome review of the Project, and reduce the burden that multiple environmental assessment processes would have on the communities involved.
3. All potential environmental effects have been conservatively predicted and measures to prevent or mitigate environmental harms related to Project interactions with valued ecosystem components ("**VECs**") have been proposed. GenPGM has also provided robust voluntary commitments that in some cases provide a net benefit to the environment and local communities, particularly Indigenous communities such as the Biigtigong Nishnaabeg First Nation ("**Biigtigong Nishnaabeg**").
4. GenPGM's commitment to environmental protection is best illustrated by two examples. First, the Project is not predicted to be a source of mercury to the environment and mercury levels in receiving waterbodies are not expected to exceed water quality objectives as a result of the Project.¹ GenPGM nonetheless heard concerns from participants and Indigenous communities about mercury. GenPGM committed to additional targeted monitoring to confirm Environmental Impact Statement ("**EIS**") predictions and ensure that the Project does not contribute to mercury or methylmercury levels in the environment.²
5. Second, experts agree that there have been no documented caribou in the site study area ("**SSA**") and the Project does not adversely affect caribou survival.³ However, GenPGM's overall benefit plan will include both habitat improvement measures and other efforts, with anticipation of contributing towards caribou recovery and supporting the return of caribou to the Project area over the long term. As a result, GenPGM is in a unique position where the Project, if approved, could contribute additional measures consistent with the federal recovery strategy and the provincial Caribou Conservation Plan to achieve a net benefit for caribou and their habitat.
6. These commitments also illustrate GenPGM's use of the precautionary principle in the effects assessment process. GenPGM has committed to avoid, mitigate, or offset effects, even if they are uncertain. Some participants emphasized what they perceive as gaps in data collection or analysis. GenPGM is confident in its EIS predictions, and the

¹ GenPGM, IR Response 5-11: Mercury Concentrations, Nutrient Enrichment, Phosphorus Loading ([CIAR #950](#)), PDF 4.

² Hearing Transcript Volume 5: March 18, 2022 ([CIAR #1149](#)), PDF 106 [**Hearing Transcript Volume 5**]; Hearing Transcript Volume 12: March 30, 2022 ([CIAR #1204](#)), PDF 23 [**Hearing Transcript Volume 12**].

³ GenPGM, IR Response 6-25: Residual Effects on Caribou, ([CIAR #950](#)), PDF 15 [**Residual Effects on Caribou**]; Hearing Transcript Volume 8: March 22, 2022 ([CIAR #1167](#)), PDF 39 [**Hearing Transcript Volume 8**].

conservative assumptions on which they are based, that have been developed over the 11-year environmental assessment process. Comprehensive follow-up monitoring and adaptive management programs are proposed to appropriately address uncertainties in the environmental assessment.

7. The Project's GHG emissions will be among the lowest of its peers in Canada and globally. The estimated GHG emissions (based on tonne of carbon dioxide equivalent per tonne copper equivalent (t CO₂ eq. / t Cu eq.) from the operation phase of the Project are compared to emissions from other mines of similar size based on a global comparison assessment performed by SKARN.⁴ The SKARN report concludes that the Project is the second lowest emitter of the 13 producing copper mines in Canada, and in the top four percent for lowest emissions among global peers.⁵
8. When considering the Project's effects on Indigenous communities, the Terms of Reference of the Amended and Restated Panel Agreement ("**Terms of Reference**") state that the Joint Review Panel ("**Panel**") must consider GenPGM's consultation with Indigenous groups during the preparation of the EIS.⁶ GenPGM has engaged with Indigenous communities affected by and interested in the Project and is committed to continuing its close relationship with Indigenous partners throughout the life of the Project. In particular, GenPGM acknowledges that Biigtigong Nishnaabeg asserts exclusive Aboriginal title to the territory in which the Project is located.⁷
9. However, it is not within the Panel's mandate to adjudicate on the satisfaction of the duty to consult, the nature of the consultation (and, if required, accommodation), or whether the Project would be an infringement of potential or established Aboriginal or Treaty rights. These considerations are within the mandate of the Crown Consultation Team ("**CCT**") and ultimately the Crown decision makers. The Panel's mandate is more limited under its Terms of Reference; for example, the Panel can make recommendations regarding potential adverse environmental effects of the Project that may affect Aboriginal or Treaty rights.⁸
10. The EIS has comprehensively analyzed all potential effects from all phases of the Project, including the decommissioning and closure of the Project. This plan before the Panel protects the Biigtig Zibi, or Pic River, at all phases of the Project and forms the basis for the environmental assessment, which determined that no significant adverse environmental effects are expected for the Pic River.⁹ Further, the Project's conceptual closure plan restores natural surface water drainage patterns following initial reclamation.
11. GenPGM acknowledges the concerns raised by Biigtigong Nishnaabeg regarding certain aspects of the closure plan and has committed to allowing Biigtigong Nishnaabeg to lead further development of environmental aspects and provide acceptance of the closure plan,

⁴ SKARN Report, Response to Undertaking 24 ([CIAR #1199](#)) [**SKARN Report**]; Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 12.

⁵ SKARN Report ([CIAR #1199](#)), PDF 3, 14-15; Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 12.

⁶ The Minister of the Environment (Canada) and the Minister of the Environment, Conservation and Parks (Ontario), "Amended and Restated Agreement to Reestablish a Joint Review Panel for the Marathon Palladium Project" (February 3, 2021) ([CIAR #730](#)), section 2.2(l), PDF 14. [**Terms of Reference**].

⁷ GenPGM Indigenous Community Sessions Presentation, April 4-9, 2022 ([CIAR #1192](#)), PDF 3.

⁸ Terms of Reference, ([CIAR #730](#)), sections 2.4 to 2.8, PDF 14-15.

⁹ Hearing Transcript Volume 13: March 31, 2022 ([CIAR #1213](#)), PDF 117-118 [**Hearing Transcript Volume 13**].

as detailed in Undertaking 31.¹⁰ GenPGM understands that water is sacred to Biigtigong Nishnaabeg, and that the Project must respect the water – not only for Biigtigong Nishnaabeg, but for all local communities.

12. To that end, GenPGM and Biigtigong Nishnaabeg jointly requested a four-week extension to further engage about the community's concerns; engagement is essential in preparing a final regulatory closure plan. Ultimately, GenPGM will submit a final closure plan to the provincial government for review and approval prior to the start of physical construction, as required by provincial legislation. GenPGM has committed to obtain Biigtigong Nishnaabeg's consent to its final closure plan.
13. The Project, if approved, will mine critical metals, specifically platinum group metals and copper, that are essential for Canada's ongoing energy transition. The Project is also in line with Canada and Ontario's recently released critical minerals strategies and can be a significant step for electrification and clean energy. Electrification, in turn, directly affects the capacity of Canada's renewable resources by allowing clean energy to propagate throughout Canada's, and the world's, low carbon economy.
14. The Project will provide significant benefits for a region facing economic hardship. The vast majority of the Project's workforce is expected to be local, thereby creating or retaining essential local employment. The Project is also expected to generate over \$1 billion in tax revenues for Ontario and Canada, and \$1.5 million per year for the Town of Marathon.¹¹
15. The Project's socio-economic benefits extend beyond tax revenues and employment. The region is currently facing population decline and its attendant loss of professionals, services, infrastructure, and social fabric.¹² The Town of Marathon has noted GenPGM's willingness to support local communities, and strongly supports the Project as a key potential contributor to the region's long-term sustainability and prosperity.
16. In conclusion, the Panel should be confident that the Project is not predicted to result in any significant adverse environmental effects, as reflected by the record. GenPGM has gone above and beyond to avoid or mitigate environmental harms and account for uncertainties in the environmental assessment through adaptive management. Further, the Project's benefits are critical for Indigenous communities including Biigtigong Nishnaabeg, as well as the Town of Marathon, northern Ontario, Canada, and all Canadians.

2. PROJECT BACKGROUND

17. The Project will be implemented in three phases.¹³ Phase 1, site preparation and construction, will focus primarily on clearing the site footprint and constructing the buildings and facilities necessary for operations. Phase 2 of the Project will be focused on operations, and will include the production of platinum group metals, copper and potentially other concentrates through extraction and processing of selected minerals from

¹⁰ Undertaking 31 Background, May 11, 2022 ([CIAR #1276](#)) [**Response to Undertaking 31**].

¹¹ GenPGM, "Marathon Palladium Project Presentation: Project Purpose and Alternative Means", March 9, 2022 ([CIAR #1107](#)), PDF 16 [**GenPGM, Purpose and Alternative Means**].

¹² Hearing Transcript Volume 11: March 29, 2022 ([CIAR #1201](#)), PDF 17-18 [**Hearing Transcript Volume 11**].

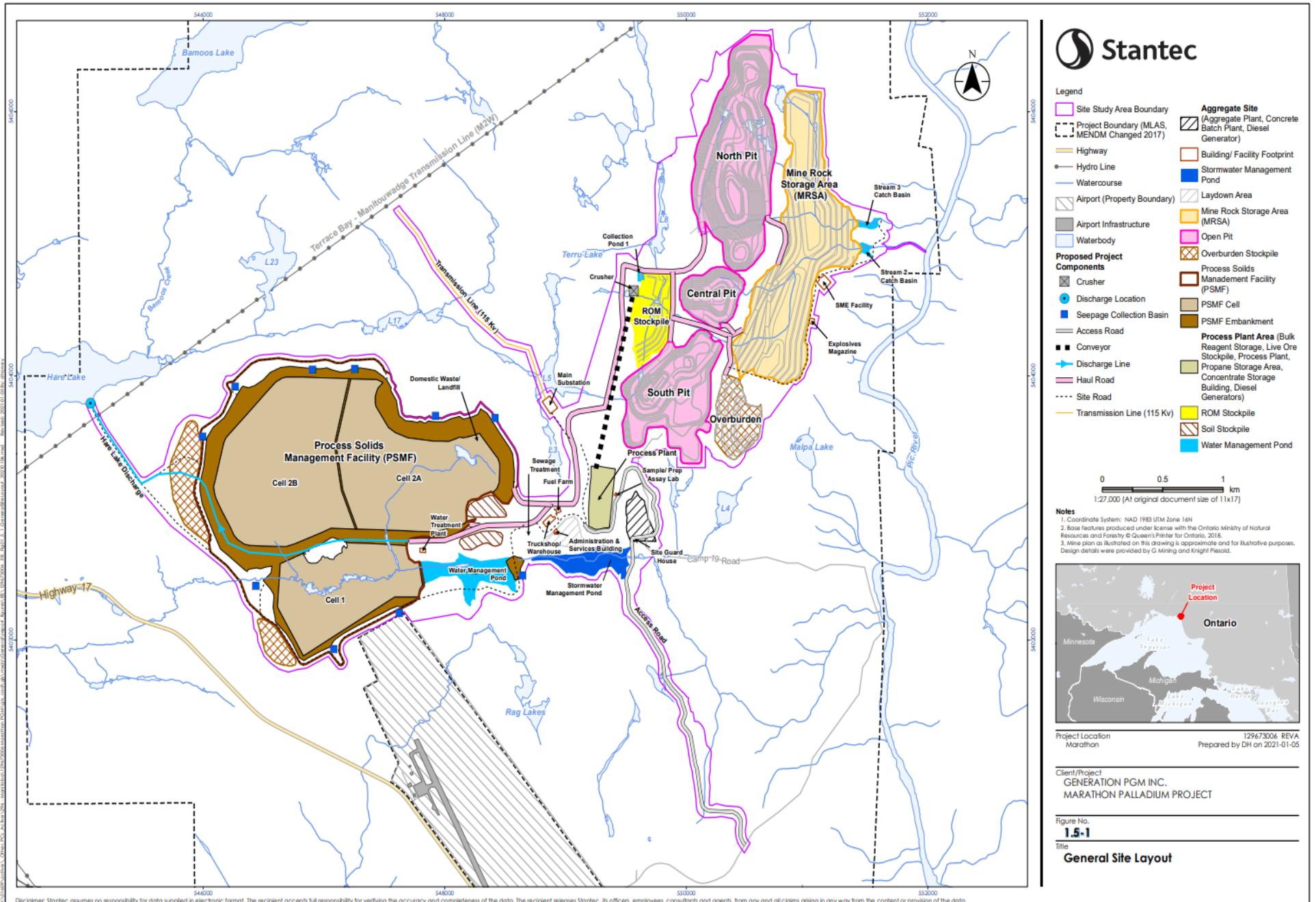
¹³ EIS Addendum, Background and Introduction ([CIAR #727](#)), PDF 40 [**EIS Addendum, Chapter 1**].

the ore body. Phase 3 of the Project is decommissioning and closure and will include activities designed to reclaim land within the Project footprint to permit future uses.

18. The Project will help meet both the national and global need for sustainable, reliable and safe sources of the metals required for the transition to a low-carbon future. These metals have been designated as "critical minerals" by the federal and Ontario governments.¹⁴
19. The Project will also provide much-needed economic benefits to the region, province and Canada. Further, GenPGM will construct the Project without causing any significant adverse environmental effects. For reference, a map of the general site layout is below:¹⁵

¹⁴ Hearing Transcript Volume 1: March 14, 2022 ([CIAR #1127](#)), PDF 31-32 [**Hearing Transcript Volume 1**]; "[Critical minerals](#)", *Government of Canada, Natural Resources Canada: Minerals and Mining [Canada, Critical Minerals]; "[Ontario's Critical Minerals Strategy 2022–2027: Unlocking potential to drive economic recovery and prosperity](#)" *Ontario Mining and minerals: 2022-2027 [Ontario, Mining and Minerals]*.*

¹⁵ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 39



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2.1. Project Description

20. The Project is expected to process an average of 25,200 tonnes of ore per day for 12.7 years.¹⁶ During construction, the average workforce is expected to range from 450 to 550 people.¹⁷ During operations, the workforce will be approximately 375 people. At the end of the operations phase of the Project, the Project will transition to closure and the site will be decommissioned.¹⁸ Closure and decommissioning will be implemented according to a formal regulatory closure plan that will be approved by the province, ensuring a seamless transition to post-closure.
21. The timeline of the Project is anticipated to include two years for the construction phase, 13 years for the operation phase and two years for decommissioning.¹⁹ The closure phase of the project will continue for several decades during which the Project site will be monitored until environmental conditions stabilize.²⁰
22. The development, maintenance and operation of the mine will include three open pits. Ore will be hauled from the open pits directly to a crusher and placed on a stockpile pad. It will then be crushed and transported to a process plant.²¹ The process plant will generate copper and PGM concentrates from the ore.²²
23. GenPGM is committed to site rehabilitation and to restoring those areas disturbed by construction and operation.²³ During closure, the site will be restored to a natural state that will support plants, animals and aquatic life in accordance with restoration goals. GenPGM will help facilitate the development of these goals, the process for which will be led by Biigtigong Nishnaabeg and established jointly with other Indigenous communities and interested parties, including government.²⁴
24. The Project proposes 10 trucks transporting copper and PGM concentrates to a rail-loadout facility per day. Given that the ore body contains magnetite and vanadium, the EIS also conservatively assessed the impacts of additional magnetite-vanadium concentration.²⁵ This additional concentration, should it become financially viable, would result in an additional 30 trucks per day (for a total of 40 trucks per day for the Project), minor plant modifications, and a reduction in the amount of material entering the Process Solids Management Facility ("**PSMF**").²⁶

¹⁶ Presentation for the March 14 and March 15 Public Hearing Session – General, March 7, 2022 ([CIAR #1104](#)), PDF 19.

¹⁷ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 42.

¹⁸ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 45.

¹⁹ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 68.

²⁰ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 68.

²¹ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 54.

²² EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 55.

²³ GenPGM, Response to Undertaking 19, March 31, 2022 ([CIAR #1210](#)), PDF 3 [**GenPGM, Response to Undertaking 19**].

²⁴ GenPGM, Response to Undertaking 19 ([CIAR #1210](#)), PDF 3.

²⁵ GenPGM, IR Response 1-3: Ore Processing, May 17, 2021 ([CIAR #749](#)), PDF 6 [**GenPGM, IR Response 1-3**].

²⁶ Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 14-15; Hearing Transcript Volume 3: March 16, 2022 ([CIAR #1138](#)), PDF 99, 102 [**Hearing Transcript Volume 3**].

25. The EIS fully assessed the potential environmental impacts of additional magnetite and vanadium concentration. To be clear; GenPGM does not intend, at this point in time, to concentrate magnetite or vanadium.²⁷ GenPGM nonetheless provided a list of the Project components and VECs that would be affected if the Project concentrated magnetite and vanadium and details regarding how those impacts were considered in the EIS.²⁸

2.1.1. Environmental Assessment Process to Date

26. The 11-year environmental assessment timeline to date is as follows:
- (a) March 2010: Stillwater, the original proponent of the Project, submitted the project description.²⁹
 - (b) June 2012: Stillwater, the original proponent of the Project, filed the EIS.³⁰
 - (c) December 2013: The Panel declared the EIS and subsequent responses to information requests sufficient to proceed to a public hearing.³¹
 - (d) October 2014: The environmental assessment process was put on hold and ultimately postponed by Stillwater.³²
 - (e) July 2019: The Project was acquired by GenPGM.³³
 - (f) July 2020: The environmental assessment process was resumed.³⁴
 - (g) January 2021: GenPGM filed an addendum to the EIS ("**EIS Addendum**").³⁵
 - (h) December 2021: The Panel declared the EIS, EIS Addendum and responses to information requests sufficient to proceed to a public hearing.³⁶
 - (i) March - May 2022: The Panel conducted a Public Hearing (the "**Hearing**").

2.2. The Project is Needed

27. If approved, the Project will be essential in providing the critical metals that are necessary to support Canada's ongoing energy transition. They will help to ensure that Canada is

²⁷ Hearing Transcript Volume 3 ([CIAR #1138](#)), PDF 91.

²⁸ Hearing Transcript Volume 3 ([CIAR #1138](#)), PDF 85-86.

²⁹ Marathon PGM Corporation, Project Description - February 2010, ([CIAR #40](#)).

³⁰ EIS 2012 ([CIAR #224](#)).

³¹ Letter from the Joint Review Panel to Stillwater Canada Inc. on the Sufficiency of Information provided in response to Supplemental Information Requests ([CIAR #612](#)); EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 7.

³² EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 7; Public Notice Marathon Platinum Group Metals and Copper Mine Project – Joint Review Panel Disbanded ([CIAR #689](#)).

³³ GenPGM: Marathon Palladium Project EA Restart, July 13, 2020 ([CIAR #692](#)).

³⁴ Gen PGM: Marathon Palladium Project EA Restart, July 13, 2020 ([CIAR #692](#)).

³⁵ EIS Addendum ([CIAR #727](#)).

³⁶ Letter from the Marathon Palladium Project Joint Review Panel to GenPGM, "Marathon Palladium Project - Notice of Sufficiency of Information", December 7, 2021 ([CIAR #955](#)).

not reliant on mines in countries with a high level of instability and well-known geopolitical issues.³⁷

2.2.1. The Project Will Support Economic Development

28. Municipal officials advised the Panel that the Project will provide a significant economic benefit for a large region of Northern Ontario that is in need of jobs. As noted by Daryl Skworchinski, Chief Administrative Officer and Clerk for the Town of Marathon, the Project will create "1,100 jobs during construction, and 400 permanent jobs in a region that has struggled economically in the last decade and even more so during the pandemic".³⁸
29. The Project will ensure economic and social sustainability for the Town of Marathon and surrounding communities for generations.³⁹ The Town of Marathon anticipates that immigration to the region as a result of the Project will lead to socio-economic benefits for each community, and noted that GenPGM has already shown a willingness to support local communities through support for local minor hockey programs and food banks.⁴⁰ As Marathon Mayor Rick Dumas stated during the Hearing:

without the development [of] this project, that are built on the natural resources such as mines and minerals... small northern Ontario communities will experience population shrinkage, including out-migration of all our professionals, loss of critical services and infrastructure, economic decline and social fabric loss. You need not to undertake a study to validate this community decline. You only need to look at real world examples of communities who lost their primary industry and wealth generators that never rebounded and whom are now just shadows of the communities they were...⁴¹

30. Project-related benefits will also be generated for local communities, including Indigenous communities, through training opportunities, direct and indirect job creation, business opportunities, and increased Gross Domestic Product ("GDP") and tax revenue for the region.⁴² As the mining sector is a key contributor to Northern Ontario's economy and crucial to the region's long-term sustainability and prosperity, the economic impact of the Project is one of its key benefits.
31. At the local level, 80-90% of the workforce for the Project is expected to be hired from within the local labour pool within the Regional Study Area ("RSA"), and the Project itself will provide \$1.5 million in property taxes per annum to the Town of Marathon.⁴³ The construction phase of the Project is expected to provide \$81 million in tax revenue to Canada and \$43 million in tax revenue to Ontario, while the operations phase of the Project is anticipated to provide \$419 million in tax revenue to Canada, \$249 million to Ontario in mining dues, and \$279 million to Ontario in corporate taxes.⁴⁴

³⁷ [Canada, Critical Minerals](#); [Ontario, Mining and Minerals](#).

³⁸ Hearing Transcript Volume 2: March 15, 2022 ([CIAR #1135](#)), PDF 10 [**Hearing Transcript Volume 2**].

³⁹ Daryl Skworchinski, Chief Administrative Officer and Clerk for the Town of Marathon; Hearing Transcript Volume 2 ([CIAR #1135](#)), PDF 12.

⁴⁰ Daryl Skworchinski, Chief Administrative Officer and Clerk for the Town of Marathon; Hearing Transcript Volume 2 ([CIAR #1135](#)), PDF 12.

⁴¹ Hearing Transcript Volume 11 ([CIAR #1201](#)), PDF 17-18.

⁴² EIS Addendum, Chapter 6.2.9: Socio-Economic Environment ([CIAR #727](#)), PDF 24-30 [**EIS Addendum, Chapter 6.2.9**].

⁴³ GenPGM, Purpose and Alternative Means ([CIAR #1107](#)), PDF 16.

⁴⁴ GenPGM, Purpose and Alternative Means ([CIAR #1107](#)), PDF 16.

2.2.2. The Project Will Support Provincial and Federal Critical Metals Strategies

32. The metals produced by the Project will be essential for national and global transitions to clean energy.⁴⁵ PGMs are rare and precious metals used in automotive catalysts to convert harmful air pollutants into relatively harmless emissions. They are also used in the manufacturing of a variety of other goods, such as water treatment components and fuel cells.⁴⁶ Copper is a key metal necessary for the development of electric and fuel-cell vehicles and is expected to face critical supply shortages in the near future as clean energy industries continue to develop and expand.⁴⁷ Approval of the Project will be a significant step in the ongoing electrification that is key to energy sustainability in Canada's low carbon economy.⁴⁸
33. Canada and Ontario have recently outlined critical minerals strategies with both PGMs and copper being included in their respective critical mineral lists.⁴⁹ As stated by the Thunder Bay Community Economic Development Commission, this is "not just another gold project, it has high value critical minerals that are in extremely high demand in Canada and Ontario" which are essential in the development of electric⁵⁰ and hybrid vehicles.
34. Currently, a significant proportion of both PGMs are sourced from countries with well-known geopolitical and/or developmental issues, including Russia.⁵¹ This creates both a risk of supply and risk to the labour and communities that are in the areas where such mines exist. These risks are aggravated by the current geopolitical events in Ukraine and the sanctions on Russia, which demonstrate the need for a homegrown, low-carbon solution for the production of these critical minerals.⁵²
35. In contrast to less stable jurisdictions, Canada is known worldwide as one of the safest locations in the mining industry and is considered a leader in terms of protecting the environment, worker safety, property security, employee rights, fair wages, and more recently, Indigenous relations.⁵³

2.3. The Project is Not Predicted to Produce Significant Adverse Environmental Effects

36. As is detailed below, the Project is not predicted to result in any significant residual adverse environmental effects or significant residual adverse cumulative effects when the mitigation and environmental protection measures proposed for the Project are taken into account.⁵⁴ Further, accidents and malfunctions, extreme weather, forest fires and seismic

⁴⁵ [Canada, Critical Minerals](#); [Ontario, Mining and Minerals](#).

⁴⁶ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 26.

⁴⁷ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 27.

⁴⁸ Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 31-32.

⁴⁹ Hearing Transcript Volume 1 ([CIAR #1127](#)); [Canada, Critical Minerals](#); [Ontario, Mining and Minerals](#).

⁵⁰ Hearing Transcript Volume 2 ([CIAR #1135](#)), PDF 54.

⁵¹ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDFs 27, 30.

⁵² Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 32.

⁵³ EIS Addendum, Chapter 1 ([CIAR #727](#)), PDF 34.

⁵⁴ Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 60; Stillwater Canada Inc., "Marathon PGM-Cu Project Environmental Impact Statement – Main Report Executive Summary ([CIAR #224](#)), PDF 39 [EIS 2012, Executive Summary].

events are not predicted to result in significant adverse environmental effects as a result of their impact on the Project.⁵⁵

37. GenPGM will employ a variety of mitigation measures in order to avoid, reduce, rehabilitate or compensate for potential effects of the Project on the environment. Key mitigation measures include avoiding direct discharge to the Pic River, engaging in the testing, segregation and management of Type 1 (non-potentially acid generating) mine rock and Type 2 (potentially acid generating) mine rock, and developing comprehensive follow-up programs and contingency plans in collaboration with community partners to confirm effects predictions made in the EIS and EIS Addendum.⁵⁶
38. GenPGM has committed to follow-up and monitoring programs that will evaluate residual effects that have been identified through the environmental assessment process and assess the efficacy of mitigation measures.⁵⁷ This is achieved through GenPGM's commitment to incorporate adaptive management as a fundamental component of the follow-up and monitoring programs. Adaptive management will provide flexibility to address and accommodate new circumstances, adjust monitoring, identify and implement new mitigation measures, or to modify existing measures throughout all phases of the Project.⁵⁸

3. LEGAL FRAMEWORK

39. Under the *Canadian Environmental Assessment Act, 2012* ("**CEAA 2012**") and Terms of Reference, the Panel is required to provide a report ("**Panel Report**") to Canada's Minister of Environment and Climate Change ("**Federal Minister**").⁵⁹ The Panel Report must make a recommendation about whether the Project poses any significant adverse environmental effects, and must consider the mitigation measures planned by the Proponent.

3.1. Governing Legislation

40. GenPGM appropriately conducted its assessment of environment effects for this Project under CEAA 2012, which is the legislation that applies to the Project based on the time that the EA process was initiated. The more recently enacted *Impact Assessment Act* ("**IAA**"), which replaced CEAA 2012, does not apply to the Project and the Panel cannot rely on the IAA in the production of the Panel Report. The key legislative steps are as follows:
 - (a) On April 16, 2010, the Canadian Environmental Assessment Agency posted a notice of referral for the environmental assessment of the Project under the *Canadian Environmental Assessment Act* ("**CEAA**").⁶⁰

⁵⁵ EIS 2012, Executive Summary ([CIAR #224](#)), PDF 31-32.

⁵⁶ Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 89.

⁵⁷ EIS Addendum, Chapter 6.1: Assessment Framework ([CIAR #727](#)), PDF 5 [**EIS Addendum, Chapter 6.1**].

⁵⁸ EIS Addendum, Chapter 7: Environmental Management ([CIAR #727](#)), PDF 11 [**EIS Addendum, Chapter 7**].

⁵⁹ Terms of Reference ([CIAR #730](#)), PDF 5; *Canadian Environmental Assessment Act, 2012*, SC 2012, c. 19, s 52 ss 43-44, 52 ("**CEAA 2012**").

⁶⁰ EIS 2012, Section 1.0: Background and Introduction ([CIAR #224](#)), PDF 12.

- (b) On July 6, 2013, CEAA was repealed and replaced by CEAA 2012. In accordance with subsection 126(1) of CEAA 2012, an environmental assessment by a review panel or joint review panel that was commenced under CEAA was to be continued under the process established under CEAA 2012.⁶¹
 - (c) On August 28, 2019, the IAA came into force, repealing CEAA 2012.⁶² However, section 183(1) of the IAA states that any environmental assessment of a designated project referred to a review panel under CEAA 2012 (as is the case with the Project) before the IAA came into force is continued under CEAA 2012 as if CEAA 2012 had not been repealed.⁶³
 - (d) On September 27, 2019, GenPGM confirmed with the Impact Assessment Agency of Canada ("**IAAC**") that the Project would remain under the CEAA 2012 environmental assessment process.⁶⁴ This is confirmed in the Terms of Reference.⁶⁵
 - (e) On March 4, 2022, the Panel issued a decision denying a motion put forward by Pays Plat First Nation requesting that elements from the Indigenous traditional knowledge section of the IAA (preamble and section 119) be added to the Public Hearing Procedures.⁶⁶
41. The Panel has therefore confirmed that the environmental assessment is being conducted under CEAA 2012.

3.2. Panel Terms of Reference and Panel Mandate

42. Upon receipt of the Panel Report, the Federal Minister will issue an environmental assessment decision statement, taking into account any mitigation measures proposed by the Panel, regarding whether the Project will have any adverse environmental effects and, if so, whether those effects are warranted in the circumstances.⁶⁷ Ontario's Minister of Environment, Conservation and Parks ("**Provincial Minister**") will also review the Panel Report and issue a decision.⁶⁸
43. Based on the Federal and Provincial Minister's decision statements, the Lieutenant Governor in Council may approve the Project to proceed in accordance with the Panel

⁶¹ [CEAA 2012](#), s 126(1).

⁶² [Impact Assessment Act](#), SC 2019, c 28, s 1 [**IAA**].

⁶³ [IAA](#), s 183(1).

⁶⁴ Mining Services Inc. for Generation PGM, "Feasibility Study Marathon Palladium & Copper Project Ontario, Canada" ([CIAR #741](#)), PDF 465 [**Feasibility Study**].

⁶⁵ Terms of Reference ([CIAR #730](#)), PDF 2.

⁶⁶ Marathon Palladium Project Joint Review Panel, "Decision of the Joint Review Panel on Motions by Pays Plat First Nation – Procedural and Confidentiality Motions" (March 4, 2022) ([CIAR #1101](#)), PDF 2; see also Pays Plat First Nation, "Pays Plat First Nation Written Submissions" (updated February 28, 2022) ([CIAR# 1080](#)) [**Pays Plat Submissions**]; Letter from the Marathon Palladium Project Joint Review Panel to Participants, "Pays Plat First Nation – Procedural and Confidentiality Motions" (February 28, 2022) ([CIAR# 1089](#)).

⁶⁷ Terms of Reference ([CIAR #730](#)), PDF 9; [CEAA 2012](#), s 52.

⁶⁸ Terms of Reference ([CIAR #730](#)), PDF 8-10.

Report, approve the Project to proceed subject to conditions specified by the Federal Minister, or refuse to approve the Project.⁶⁹

3.3. Environmental Assessment Scope

44. CEAA 2012 and the Terms of Reference set out the scope of the environmental assessment to be conducted by the Panel.⁷⁰ Given the importance of their respective roles, it is helpful to define the mandate of the Panel in assessing the Proponent's consultation with Indigenous communities and how the Panel's role differs from the mandate of the CCT.

3.3.1. Indigenous Consultation and the Panel's Mandate to Consider Environmental Effects

45. The Panel's mandate is to assess the environmental effects of the Project. CEAA 2012 expressly states that one of those effects is the effect on "aboriginal peoples from a designated project" and include any "change that may be caused to the environment on (i) health and socio-economic conditions; (ii) physical and cultural heritage; (iii) the current use of lands and resources for traditional purposes; or (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance."⁷¹
46. Section 19(1) of CEAA 2012 also requires the Panel to consider any mitigation measures that are "technically and economically feasible and that would mitigate any significant adverse environmental effects of the designated project" on Indigenous communities impacted by the Project.⁷²
47. The Terms of Reference further define the mandate of the Panel and the Crown regarding assessment of Indigenous rights.⁷³ The Panel's mandate is limited and requires, for example, the Panel to make recommendations regarding potential adverse environmental effects of the Project that may affect Aboriginal or Treaty rights.⁷⁴ Adjudication about the satisfaction of the duty to consult, the nature of the consultation (and, if required, accommodation), or whether the Project would be an infringement on potential or established Aboriginal or Treaty rights is beyond the scope of the Panel's mandate. These considerations are the responsibility of the CCT and the Crown decision makers.⁷⁵

3.3.2. The Crown's Duty to Consult

48. The CCT's consultation with Indigenous communities regarding the Project is unrelated to CEAA 2012 and is instead required by section 35 of the *Constitution Act, 1982*.⁷⁶ The CCT will provide its final report to the Federal Minister. That report, along with the Panel Report, will ultimately inform the Federal Minister's decision statement about the Project.

⁶⁹ Terms of Reference ([CIAR #730](#)), PDF 9.

⁷⁰ Terms of Reference ([CIAR #730](#)), PDF 16.

⁷¹ *CEAA 2012*, s 5(1)(c)(i-iv).

⁷² *CEAA 2012*, s 19(1)(d); *Tsleil-Waututh Nation v. Canada (Attorney General)*, [2018 FCA 153](#) at para 60 [*Tsleil-Waututh Nation*].

⁷³ Terms of Reference ([CIAR #730](#)), sections 2.4 to 2.8, PDF 14-15.

⁷⁴ Terms of Reference ([CIAR #730](#)), sections 2.4 to 2.8, PDF 14-15.

⁷⁵ Terms of Reference ([CIAR #730](#)), sections 2.4 to 2.8, PDF 14-15.

⁷⁶ *The Constitution Act, 1982*, Schedule B to the Canada Act 1982 (UK), 1982, c 11 at s 35.

49. While the Panel can consider the CCT's report ("**CCT Report**"), currently in draft phase, the primary purpose of that report is to assess the potential effects of the Project on the rights of Indigenous peoples and to ultimately inform the Federal Minister about the scope of the effects.⁷⁷ One of the primary goals of meaningful consultation by the Crown is to express to the Federal Minister the positions of Indigenous communities regarding a Project – whether negative or positive – and ensure that those positions are considered by the Federal Minister. The nature of the Crown's consultation will also dictate whether accommodations are required for a certain community if the Project is ultimately approved.⁷⁸

50. Jason Boisvert, Manager, Crown Consultation Division (IAAC) of the CCT, stated the following at the Hearing regarding the Panel's role and CCT's role:

[I]t will be the responsibility of the panel to determine significance of effects under 5(1)(c). What will happen at once the report is published -- the panel's report is we are reliant or dependent on the conclusions of the panel regarding the significance of effects on 5(1)(c), so we will be consulting the Indigenous groups on these conclusions and recommendations and update our final severity accordingly.⁷⁹

51. The CCT has also acknowledged their responsibility to address pre-existing issues and any adverse socio-economic concerns of the Indigenous communities that are impacted by the Project, as stated in the CCT Report:

The CCT understands that the current state of the communities' infrastructure services as described by Biigtigong Nishnaabeg is inadequate and that services are strained. While Biigtigong Nishnaabeg clearly articulated the needs of the community regarding housing, infrastructure and education, the CCT notes that these needs pre-date the proposed Project's potential impacts or contributions.⁸⁰

52. Further, the CCT Report noted that "proposed meaningful mitigation measures that would be the responsibility of federal and provincial government agencies" and that government support from such agencies will "help improve upon existing conditions and reduce potential adverse socio-economic effects of the Project on their community should any members decide to move back to the community."⁸¹

53. Biigtigong Nishnaabeg stated in its' written closing remarks for the Hearing that it is not only the responsibility of GenPGM, but also the Crown, to ensure that impacts of the Project are addressed.⁸² Biigtigong Nishnaabeg noted that while general commitments have been made by the Crown, specific commitments must be offered to address the historic and cumulative socio-economic impacts to Biigtigong Nishnaabeg if the Project is permitted to proceed.⁸³ Biigtigong Nishnaabeg also stated that it expected the Crown to

⁷⁷ Crown Consultation Team, "Written Submission for the Public Hearing of the Marathon Palladium Project", February 25, 2022, updated March 25, 2022, ([CIAR #1083](#)) [**CCT Report**].

⁷⁸ [Tsleil-Waututh Nation](#) at para 500-502.

⁷⁹ Hearing Transcript Volume 15: April 4, 2022 ([CIAR #1229](#)) PDF 186 [**Hearing Transcript Volume 15**].

⁸⁰ CCT Report ([CIAR #1083](#)), PDF 78.

⁸¹ CCT Report ([CIAR #1083](#)), PDF 75.

⁸² Biigtigong Nishnaabeg Closing Remarks, May 17, 2022 ([CIAR #1282](#)) PDF 3 [**Biigtigong Nishnaabeg Closing Remarks**].

⁸³ Biigtigong Nishnaabeg Closing Remarks, ([CIAR #1282](#)) PDF 4.

work to rectify the impacts of the Crown's historically racist and colonial policies against on Biigtigong Nishnaabeg.⁸⁴

4. INDIGENOUS CONSULTATION

4.1. *Acknowledgement of Biigtigong Nishnaabeg Aboriginal Title*

54. GenPGM acknowledges that Biigtigong Nishnaabeg asserts exclusive Aboriginal title to the territory in which the Project is located and recognizes that Biigtigong Nishnaabeg did not enter into or adhere to the Robinson Superior Treaty 1850.⁸⁵ Biigtigong Nishnaabeg has filed an action seeking a declaration of Aboriginal title from the court, and Biigtigong Nishnaabeg entered into formal negotiations in May 2019 with Canada and Ontario.⁸⁶
55. GenPGM also acknowledges that Biigtigong Nishnaabeg has completed numerous comprehensive studies which show Biigtigong Nishnaabeg's continuing use and occupancy of the territory.⁸⁷ The reports and detailed maps generated by these studies demonstrate that Biigtigong Nishnaabeg has extensive traditional land and resource use in the SSA and Local Study Area ("**LSA**"), including their community trapline (TR022). Biigtigong Nishnaabeg also has economic, societal, spiritual and cultural value associated with the SSA and waterways, like the Pic River which is a connection to their culture, way of life and history.
56. Biigtigong Nishnaabeg's assertion of Aboriginal title, extensive traditional land and resource use in the SSA and LSA, and continued use and occupancy of the territory make Biigtigong Nishnaabeg an essential partner in the Project. Given the importance of the Project area to Biigtigong Nishnaabeg, GenPGM has been engaging with the Biigtigong Nishnaabeg community for more than 15 years.⁸⁸ Biigtigong Nishnaabeg and GenPGM have an environmental committee that meets bi-weekly. GenPGM also hosts regular community meetings, regular exploration updates, and provides capacity for technical review of updated baseline reports and the EIS Addendum. GenPGM also shared commitments and environmental management chapters of the EIS prior to regulatory submission.
57. GenPGM has made it clear that the Project will not proceed without Biigtigong Nishnaabeg's support.⁸⁹ This is reflected in the Hearing record and in the response to Undertaking 31. Specifically, GenPGM is required to file a closure plan in accordance with provincial regulations in order for the Project to proceed. GenPGM has committed to obtain Biigtigong Nishnaabeg's consent for its final closure plan.⁹⁰

4.2. *GenPGM's Indigenous Consultation and Engagement to Date*

58. In addition to engagement with Biigtigong Nishnaabeg, the Federal and Provincial guidelines to the EIS ("**EIS Guidelines**") require GenPGM to consult with impacted

⁸⁴ Biigtigong Nishnaabeg Closing Remarks, ([CIAR #1282](#)) PDFs 3-4.

⁸⁵ GenPGM Indigenous Community Sessions Presentation, April 4-9, 2022 ([CIAR #1192](#)), PDF 3.

⁸⁶ GenPGM Indigenous Community Sessions Presentation, April 4-9, 2022 ([CIAR #1192](#)), PDF 3.

⁸⁷ EIS Addendum, Chapter 6.12: Indigenous Considerations, ([CIAR #727](#)), PDF 26 Figure 6.2.12-3.

⁸⁸ EIS 2012, Chapter 4 ([CIAR #224](#)), PDF 8.

⁸⁹ Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 33.

⁹⁰ Response to Undertaking 31 ([CIAR #1276](#)), PDF 77.

Indigenous groups to obtain their perspectives and opinions about the Project and the potential effects of the Project on their Aboriginal interests.⁹¹

59. These consultations include information sharing about the potential effects of the Project on the current use of lands and resources for traditional purposes, on physical and cultural heritage, and on the capacity of renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future.⁹²
60. Beginning in 2004, GenPGM has engaged in consultation with all of the Indigenous groups that have been determined to have an interest in the Project, either by self-reporting or by the CCT, including 13 First Nations and three Métis communities.⁹³ Seven communities responded to GenPGM's engagement efforts and stated their interest in the Project.⁹⁴
61. In addition to Biigtigong Nishnaabeg referenced above, GenPGM has consulted with Indigenous communities about traditional land use and traditional knowledge studies, as well as input on the determination of VECs.⁹⁵ A summary of specific engagement activities is set out below – a fulsome reporting of Indigenous consultation is included in Section 5 of the EIS Addendum and in GenPGM's presentation for the community sessions.⁹⁶
 - (a) Pays Plat First Nation: GenPGM has consulted with the Pays Plat First Nation since 2010. It has made site visits and met with the Chief, as well as provided capacity funding for traditional land use studies. GenPGM has provided regular exploration updates, technical reviews, and has hosted ongoing environmental committee meetings with Pays Plat First Nation.
 - (b) Michipicoten First Nation: GenPGM provided capacity funding for the Michipicoten First Nation's environmental review and participation in consultation regarding the Project. Community representatives attended monthly regional environmental committee meetings, and a combined meeting with the Ministry of the Environment, Conservation and Parks ("**MECP**") and GenPGM to discuss caribou mitigation measures in February 2022.
 - (c) Ginoogaming First Nation: The Ginoogaming First Nation attended GenPGM's regional monthly environmental committee meetings since July 2021, as well as two individual environmental meetings with community staff. GenPGM also provided capacity funding for Ginoogaming First Nation's environmental review in 2021 and attended a regional meeting in May 2022.⁹⁷

⁹¹ Canadian Environmental Assessment Agency and Ontario Ministry of Environment, "Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act* and Ontario *Environmental Assessment Act* for the Marathon Platinum Group Metals and Copper Mind Project" (August 10, 2011) ([CIAR #150](#)), PDF 31 [**EIS Guidelines**].

⁹² EIS Guidelines ([CIAR #150](#)), PDF 31.

⁹³ EIS Addendum, Chapter 6.2.12 ([CIAR #727](#)), PDF 22, Figure 6.2.12-1.

⁹⁴ EIS Addendum, Chapter 5: Consultation and Engagement ([CIAR #727](#)), PDFs 15-18 [**EIS Addendum, Chapter 5**].

⁹⁵ EIS Addendum, Chapter 5 ([CIAR #727](#)) at PDF 30, 5.2-11 at PDF 37, 5.2-14 at PDF 44, Figures 5.2-9 .

⁹⁶ EIS Addendum, Chapter 5 ([CIAR #727](#)); GenPGM Indigenous Community Sessions Presentation, April 4-9, 2022 ([CIAR #1192](#)).

⁹⁷ Response to Undertaking 31 ([CIAR #1276](#)), PDF 1.

- (d) Métis Nation of Ontario Region 2: GenPGM attended a community feast with the Métis Nation of Ontario in 2010, followed by a regional committee meeting in 2011 and a traditional knowledge study completed in 2012. GenPGM provided regular exploration updates and hosted monthly regional environmental committee meetings since March 2021. Further Region 2 consultation meetings were held in April 2021, June 2021, November 2021, and April 2022.⁹⁸ Tim Sinclair, chair of the Métis Nation of Ontario Region 2 consultation committee, commented about GenPGM the Hearing:

I can say they have been a great asset to the community over the years. I've watched this happen for a very long time... Because of the seriousness of the commitment to the people who have been working for GenPGM, the Métis nation has seen firsthand [sic] their commitment to the environment in all aspects...⁹⁹

On May 12, 2022, the Métis Nation of Ontario raised concerns in a written filing about asbestos-forming minerals at the mine site.¹⁰⁰ GenPGM has assessed this issue and noted that, while PGM and copper deposits often have high serpentine content (asbestos being a form of serpentine) due to the main mineral phases breaking down to serpentine over time, serpentine is not expected to be abundant in the Marathon deposit.¹⁰¹ GenPGM will be meeting with the Métis Nation of Ontario later in May 2022 regarding its requests for further information about testing for asbestos-forming materials.¹⁰²

- (e) Red Sky Métis Independent Nation: GenPGM and Red Sky Métis had a project design meeting, community information session, and project impacts and benefits meeting. They also engaged with regular exploration updates and attendance at regional environmental committee meetings since March 2021. The Red Sky Métis community provided a Letter of Support in July 2021 and hosted GenPGM at a community BBQ in August 2021.
- (f) Jackfish Métis: The Jackfish Métis community took part in consultation with GenPGM over the course of years, engaging in VEC assessments and traditional land and resource use discussions. Jon MacDonald, the representative for the Jackfish Métis, stated at the Hearing:

Our concerns for the lands and waters were foremost and as well were presented through various forms of meetings, some in person and now virtually... The company has been extremely diligent in our opinion with answers addressing the concerns as well as committing to ideas and opinions from our group. We feel that we have been a part of the process to date and the company has committed to an open-door policy... Our concerns, questions and statements if pertinent continue to be addressed

⁹⁸ Response to Undertaking 31 ([CIAR #1276](#)), PDF 1.

⁹⁹ Hearing Transcript Volume 15: April 4, 2022 ([CIAR #1229](#)), PDF 128-130 [**Hearing Transcript Volume 15**].

¹⁰⁰ Closing Remarks – JPR – Marathon Palladium Project by the Métis Nation of Ontario Region 2, May 12, 2022 ([CIAR #1280](#)), PDF 1.

¹⁰¹ GenPGM Response to Métis Nation of Ontario (MNO) regarding serpentine, April 8, 2022 ([CIAR #1267](#)), PDF 1.

¹⁰² In its closing remarks, MNO requested a reference for IR 8-15. GenPGM understands MNO intended to reference IR 5-18 and the reference is [CIAR #950](#).

in a timely manner by the mining company from the very first shovels in the ground to the closing plans.¹⁰³

62. Looking ahead, GenPGM's consultation with Indigenous communities is planned to continue throughout the life of the Project.¹⁰⁴ Ongoing consultation activities will include an updated website and social media presence, and agreement negotiations are underway with communities to support direct participation in report review, environmental monitoring, jobs and contracts.¹⁰⁵
63. The objectives of these activities are to ensure transparency about the Project, specifically with regard to environmental management and social responsibility, long-term monitoring, and reclamation. Consultation will also continue to explore opportunities related to employment, economic benefits, and community benefits that contribute to the broader community objectives.¹⁰⁶

4.3. Recommendations from the Crown Consultation Committee

64. The CCT set out a series of recommendations in the CCT Report.¹⁰⁷ GenPGM has met, or is in the process of meeting, the recommendations that are those recommendations that are within its care and control. For example, GenPGM committed to engage with Biigtigong Nishnaabeg regarding the preparation of its response to Undertaking 31.¹⁰⁸ This engagement has continued GenPGM's discussions with Biigtigong Nishnaabeg regarding topics recommended by the CCT Report, such as the development of mitigation measures to protect fish and fish habitat and follow-up programs related to water quality in the Project area.¹⁰⁹
65. GenPGM considers that certain CCT recommendations are most appropriately addressed outside of the Panel's process. For example, the CCT recommendations seeking financial and other details of land-based offsets and a harvester training fund are more appropriately being discussed in the context of bilateral commercial agreements between GenPGM and Indigenous communities such as Biigtigong Nishnaabeg.¹¹⁰ GenPGM further considers certain socio-economic recommendations, regarding health services plans beyond Employee Assistance programs for example, are the responsibility of the Crown.¹¹¹ The CCT Report confirms that "support and funding of a social service plan and targeted health services plan" is a Crown accommodation measure.¹¹²

5. PUBLIC AND GOVERNMENT CONSULTATION

66. GenPGM has a long history of public consultation with local communities, government agencies and the Town of Marathon. For approximately 18 years, since 2004, GenPGM (and its predecessor) has sought input from government agencies and Project

¹⁰³ Hearing Transcript Volume 1: March 14, 2022 ([CIAR #1127](#)), PDF 129-130.

¹⁰⁴ EIS Addendum, Chapter 6 ([CIAR #727](#)), PDF 8.

¹⁰⁵ EIS Addendum, Chapter 5 ([CIAR #727](#)), PDF 7.

¹⁰⁶ EIS Addendum, Chapter 5 ([CIAR #727](#)), PDF 51-52.

¹⁰⁷ CCT Report ([CIAR #1083](#)).

¹⁰⁸ Hearing Transcript Volume 14 ([CIAR #1215](#)), PDF 113

¹⁰⁹ Response to Undertaking 31 ([CIAR #1276](#)), PDFs 77-81.

¹¹⁰ CCT Report ([CIAR #1083](#)), PDFs 59 and 191.

¹¹¹ CCT Report ([CIAR #1083](#)), PDFs, 57, 71, 80.

¹¹² CCT Report ([CIAR #1083](#)), PDF 80.

stakeholders regarding the Project, including its design, construction, and reclamation planning. The environmental assessment process has been rigorous and local residents have expressed their desire to have the Project go ahead in order to bring about the positive impacts and benefits offered by the Project.¹¹³ For example, Linda Quesnelle, a local resident, filed her position statement on the registry:

The Marathon Palladium project is a much need for our future especially with our goals to go green. This project has been studied for years and has some of the most highest environmental standards in the country. This project would help create many good jobs for the Thunder Bay region as well as the indigenous communities in the area. This would be a much needed boost to the economy creating not only mining jobs, but other jobs related as well. Do it for our future. Please don't delay any further, and approve this Marathon Palladium project as soon as possible.¹¹⁴

5.1. Comprehensive Public Consultation to Date

67. GenPGM's consultation strategy has focussed on informing the public about key Project components, Project design, and updates on the Panel Review process. Early consultation sought input from public stakeholders regarding design, construction, and reclamation planning.¹¹⁵ Since 2008, formal information sessions have been held for local communities, and these sessions will continue through the life of the Project. In addition to the formal sessions, GenPGM maintained an "open door" for consultation and ensured that public stakeholders had opportunities for ongoing communication.¹¹⁶
68. Consultation between GenPGM, its predecessors and the federal, provincial and municipal governments were initiated in November 2007 and remain ongoing to date. This process has ensured government review of Project plans as they are developed.¹¹⁷ GenPGM will continue to consult with public and government stakeholders throughout the life of the Project.¹¹⁸

5.2. Stakeholder Support for the Project

69. GenPGM has received an overwhelmingly positive response from the local community for the Project.¹¹⁹ At least 45 individual submissions have been filed in support of the Project, which comprise approximately 70% of the total number of individual submissions. These submissions note the benefits the Project will bring to the community by way of jobs,¹²⁰

¹¹³ Comment from Peter Orasi to the Marathon Palladium Project Joint Review Panel ([CIAR #860](#)); Comment from Norman Desmoulin to the Marathon Palladium Project Joint Review Panel ([CIAR #805](#)); Comment from Al Hall to the Marathon Palladium Project Joint Review Panel ([CIAR #778](#)); Comment from Steve Button to the Marathon Palladium Project Joint Review Panel ([CIAR #762](#)); Comment from Sheena Allard to the Marathon Palladium Project Joint Review Panel ([CIAR #867](#)); Comment from Linda Quesnelle to the Marathon Palladium Project Joint Review Panel ([CIAR #763](#)).

¹¹⁴ Comment from Linda Quesnelle to the Marathon Palladium Project Joint Review Panel ([CIAR #763](#)).

¹¹⁵ EIS 2012, Chapter 4 ([CIAR #224](#)), PDF 99.

¹¹⁶ EIS Addendum, Chapter 5 ([CIAR #727](#)), PDF 46.

¹¹⁷ EIS 2012, Chapter 4 ([CIAR #224](#)), PDF 99.

¹¹⁸ EIS Addendum, Chapter 5 ([CIAR #727](#)), PDFs 56-57.

¹¹⁹ EIS Addendum, Chapter 5 ([CIAR #727](#)), PDFs 48-51.

¹²⁰ Comment from Rose Hardy to the Marathon Palladium Project Joint Review Panel ([CIAR #836](#)).

economic health of the area,¹²¹ development of greener industry,¹²² and the harnessing of Ontario's natural resources, among many other things. In particular, individuals have noted that "work is scarce" in the region, and that the Project is paramount for communities in the area to prosper.¹²³ This includes individuals from as far away as Thunder Bay, who have noted that the Project is anticipated to provide for those in the city who are in need of jobs.¹²⁴

70. Along with job creation and the influx of economic stimulus, local stakeholders made it clear that long-term projects such as the Project will stabilize the economy, strengthen the community of the surrounding area and provide for a "better future" and "improve the quality of life".¹²⁵
71. Local business owners have specifically expressed their support for the project due to, among other things, the economic benefits and tax revenues.¹²⁶ The opportunity for local businesses to supply goods and services to the Project and its workforce during all of its phases will provide long-term support and vitality to the business community.¹²⁷
72. From the early phases of the consultation process, GenPGM has made clear that collaborative community relationships are an essential element of Project and its success. It has made these relationships a priority and will continue to engage and collaborate with Public Stakeholders throughout the life of the Project.¹²⁸

6. ALTERNATIVE ANALYSES FOR THE PROJECT

73. GenPGM also performed in-depth alternative assessments for the Project, including "Alternatives To" the Project and "Alternative Means" analyses.¹²⁹
74. For the Alternatives To assessment, the EIS and EIS Addendum presented two potential Project alternatives - proceeding with the Project as proposed and the "Do Nothing" alternative that represents the status quo. The primary advantages and benefits of the

¹²¹ Comment from Chris Moorhead to the Marathon Palladium Project Joint Review Panel ([CIAR #795](#)).

¹²² Comment from Michael Antonietti to the Marathon Palladium Project Joint Review Panel ([CIAR #754](#)).

¹²³ ([CIAR #993](#)); Comment from Sean Winter to the Marathon Palladium Project Joint Review Panel ([CIAR #989](#)).

¹²⁴ Comment from Romeo Cananayan to the Marathon Palladium Project Joint Review Panel ([CIAR #1006](#)).

¹²⁵ Comment from Michele Timms to the Marathon Palladium Project Joint Review Panel ([CIAR #826](#)); Comment from Darlene Leduc to the Marathon Palladium Project Joint Review Panel ([CIAR #773](#)); Comment from Brandi DeJonge to the Marathon Palladium Project Joint Review Panel ([CIAR #849](#)); Comment from Roberta Zuk to the Marathon Palladium Project Joint Review Panel ([CIAR #890](#)); Comment from Lesley Zuk to the Marathon Palladium Project Joint Review Panel ([CIAR #891](#)); Comment from Rob Dupuis to the Marathon Palladium Project Joint Review Panel ([CIAR #846](#)); Comment from Brett Bowman to the Marathon Palladium Project Joint Review Panel ([CIAR #850](#)).

¹²⁶ Feasibility Study ([CIAR #741](#)).

¹²⁷ Comments from the Town of Marathon to the Joint Review Panel on the Environmental Impact Statement ([CIAR #300](#)).

¹²⁸ Feasibility Study ([CIAR #741](#)).

¹²⁹ EIS Addendum, Chapter 3: Project Alternatives ([CIAR #727](#)) [EIS Addendum, Chapter 3]; IR Response 4.2.3 – Analysis of Alternative Means ([CIAR #456](#)); IR Response 4.2.4 – Road Access and Discharge Pipeline Options ([CIAR #406](#)); IR Response 4.3.1 – Alternatives to Mine Waste Disposal ([CIAR #467](#)); IR Response 5.1 – Assessment of Alternatives (Rail Load Out) ([CIAR #441](#)); IR Response 6.2 – Assessment of Alternatives (Transmission Line) ([CIAR #371](#)); SIR Response 1 – Assessment of Alternative Rail Load-out Locations and Rail Shunting Noise Criteria ([CIAR #580](#)).

Project, in addition to providing needed resources for the global palladium market, are socio-economic in nature: economic activity, training opportunities, direct and indirect job creation and business opportunities, increased household income, increased GDP, and increased tax revenue for governments among other things.¹³⁰ These potential benefits are anticipated to be realized by both Indigenous and non-Indigenous individuals and communities alike.¹³¹ Accrued benefits would be realized over the life of the Project.

75. In the alternative “Do Nothing” scenario, these benefits would not accrue. The “Do Nothing” option would result in unrealized advantages and failure to harness an existing resource for which global demand exists.¹³²
76. The Alternative Means analysis considered alternative locations for infrastructure, routes for Project components, methods of development and implementation, and mitigation measures, among other things¹³³ GenPGM performed robust assessments on the site access road, transmission line, and mine waste storage.¹³⁴ The assessments evaluated multiple criteria to determine the best options, including biophysical environment factors, socio-economic environment factors, Indigenous considerations, technical factors and cost factors.¹³⁵ The conclusions of these Alternative Means assessments resulted in changes to infrastructure to avoid culturally and environmentally significant watersheds, as well as a reduced footprint to mitigate and avoid impacts on water and fish.¹³⁶

7. TERRESTRIAL ENVIRONMENT

77. Due to the mitigation and environmental protection measures proposed by GenPGM, outlined below, the Project is not predicted to result in significant residual adverse environmental effects, or significant residual adverse cumulative effects on the terrestrial environment, which includes Species at Risk and other wildlife (including migratory birds), vegetation, and soils. GenPGM has focused its closing remarks on the effects of the Project on caribou, as they were a main focus during the terrestrial hearing sessions.

7.1. Caribou

7.1.1. Undertaking 18: Updated Caribou Mapping

78. There is no documented current or historical use of the SSA by boreal caribou and no evidence of boreal caribou in the LSA since 2015.¹³⁷ In the absence of recovery, there is therefore very little potential for caribou to interact with the Project now or in the near future. However, GenPGM conducted a robust analysis to determine potential effects to caribou and caribou habitat, using *inter alia*, the Ministry of Northern Development, Mines, Natural Resources and Forestry’s (“MNDMNR”) MNDMNR’s caribou habitat models, MECP’s caribou habitat categorization, and Environment and Climate Change Canada

¹³⁰ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 6.

¹³¹ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 6.

¹³² EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 6.

¹³³ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 6.

¹³⁴ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 10-34.

¹³⁵ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 7-10.

¹³⁶ EIS Addendum, Chapter 3 ([CIAR #727](#)), PDF 10-12.

¹³⁷ Response to Information Request Package of September 13, 2021, ([CIAR #950](#)), PDF 15.

("ECCC") and MNDMNR's caribou habitat disturbance models using updated data.¹³⁸ GenPGM is committed to enhancing caribou habitat through an overall benefit plan.

79. GenPGM recently updated its robust caribou analysis. On January 7, 2022, GenPGM submitted materials further detailing caribou connectivity and modelling.¹³⁹ As will be outlined below, GenPGM also provided fulsome responses to Undertakings 18-21, which provided updated mapping and information regarding onsite rehabilitation measures, offset measures, and caribou monitoring.
80. In its response to Undertaking 18, GenPGM provided updated mapping regarding caribou habitat connectivity.¹⁴⁰ Connectivity needs to be maintained to ensure no long-term effects on caribou movements and any associated effects on genetic interchange among caribou populations, should the population recover.¹⁴¹ The Project presents an opportunity to improve long-term conditions for boreal caribou in the Lake Superior Coastal Range.
81. Impacts to potential caribou habitat were assessed using the predecessor to Ministry of Natural Resources and Forestry's ("MNR") caribou habitat models, MECP's caribou habitat categorization, and Environment Canada's and MNR's caribou habitat disturbance models using updated data. There has been a detailed review of available caribou population and distribution data, including conducting incidental ground surveys between 2009 and 2021, aerial surveys of the Project area in 2011, 2013, and 2022¹⁴² and trail cameras in 2021 to 2022.¹⁴³
82. Sensory disturbance is not anticipated to result in significant effects on Category 1 caribou habitat or potential caribou travel during the life of the Project or post-closure. GenPGM has proposed numerous potential progressive reclamation measures for the Project, which will facilitate post-closure caribou connectivity within and between ranges.¹⁴⁴

7.1.2. Caribou do not use the Site Study Area

83. The potential for caribou interaction with the Project has been greatly reduced since the EIS was originally drafted in 2012. At this time, there were estimated to be at least 500 caribou in the Lake Superior Coastal Range, with most on offshore islands and an unknown, but smaller, number on the mainland and nearshore islands. However, the population declined following the winter of 2014, when ice bridges on Lake Superior provided access to offshore islands, resulting in the subsequent decrease in caribou population on both Michipicoten Island and the Slate Islands due to wolf predation.¹⁴⁵

¹³⁸ Response to Information Request Package of September 13, 2021, ([CIAR #950](#)), PDF 15; EIS Addendum, Chapter 6.2.8: Species at Risk ([CIAR #727](#)) [**EIS Addendum, Chapter 6.2.8**].

¹³⁹ GenPGM, Additional Caribou Information, ([CIAR #976](#)) [**Additional Caribou Information**].

¹⁴⁰ GenPGM, Response to Undertaking 18 – Clarifications on the caribou connectivity analysis ([CIAR #1209](#)) [**Response to Undertaking 18**].

¹⁴¹ Response to Undertaking 18 ([CIAR #1209](#)), PDF 20.

¹⁴² EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 25.

¹⁴³ EIS Addendum, Chapter 6.2.7: Wildlife ([CIAR #727](#)), PDF 23-26.

¹⁴⁴ GenPGM, Additional Caribou Information, January 7, 2022 ([CIAR #976](#)), PDF 40.

¹⁴⁵ Ministry of Natural Resources and Forestry, "[Seeking Advice on the Future of Caribou in the Lake Superior Coast Range](#)", Ontario, March 2018, PDF 13.

Recent field surveys have found no caribou present in the LSA, with the last observation of caribou within the LSA being 2015¹⁴⁶

84. There is also no calving or nursery habitat present at the SSA, and no Category 1 habitat is located within the SSA. In fact, the vast majority of the SSA (96%) is already considered disturbed with respect to caribou habitat models; only an additional 45 hectares (4%) of new disturbance would be created by the Project. Additional disturbance would therefore have a negligible effect on overall range disturbance levels at the RSA level, or at the range level (Lake Superior Coastal Range without the 10 kilometre buffer) according to provincial and federal caribou habitat disturbance models.¹⁴⁷

7.1.3. The Project Does Not Adversely Affect Caribou Survival

85. With appropriate mitigation, no adverse effects on caribou survival are anticipated from the Project given the relative lack of known historical or current use of the SSA by boreal caribou and the very low numbers of boreal caribou estimated to remain in the mainland Lake Superior Coastal Range.¹⁴⁸ During the hearing, Parks Canada confirmed that the Project would not directly affect caribou use of Pukaskwa National Park.¹⁴⁹

7.1.4. Undertaking 20: The Project has a Net Benefit on Caribou Habitat

86. If a proposed mining project is determined by the MECP to have negative effects on caribou and/or their habitat, then an overall benefit plan must be developed to more than compensate for these effects.¹⁵⁰ Regardless of the Project's potential effects, GenPGM has committed to preparing an overall benefit plan.
87. GenPGM's proposed overall benefit plan will include both habitat improvement measures and other efforts, which will help boreal caribou return to the Project area post-closure. GenPGM has facilitated discussions between Indigenous communities and government agencies regarding caribou and supports the development of community-led initiatives that benefit caribou.
88. As outlined in GenPGM's response to Undertaking 20, key mitigation measures being considered to achieve an overall benefit for caribou fall into seven main categories:
- (a) Road decommissioning and enhanced silviculture;
 - (b) Translocations of caribou;
 - (c) Maternal penning (to protect neonate calves until they are old enough to better escape predators);
 - (d) Enhanced monitoring of boreal caribou, alternate prey, and wolves to improve understanding of the effectiveness of planned initiatives;

¹⁴⁶ Residual Effects on Caribou, ([CIAR #950](#)), PDF 15.

¹⁴⁷ EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 31-40 & Appendix D9

¹⁴⁸ EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 32.

¹⁴⁹ Hearing Transcript Volume 9: March 23, 2022 ([CIAR #1172](#)), PDF 128-130 [**Hearing Transcript Volume 9**].

¹⁵⁰ See [Endangered Species Act](#), 2007, SO 2007, c 6, at section 17(2)(c).

- (e) Targeted research;
 - (f) Community-based measures, including seed funding of a Biigtigong Wildlife Department, coordinator, or First Nations Cooperative; and
 - (g) Alternate prey and/or predator control¹⁵¹
89. MECP has advised that GenPGM's Undertaking 20 "lacks clarity" and distinction on which of the above actions are proposed for mitigation and which are proposed as beneficial actions.¹⁵² While GenPGM can clarify which actions are mitigation and which are overall benefit, requiring the specific classification leads to a false dichotomy. Many actions can be considered both mitigation and overall benefit. Further, all actions listed above have been linked to federal recovery strategy or provincial caribou conservation plan, and have a high level of support.¹⁵³
90. The proposed off-site mitigation will result in the addition of approximately 115 hectares of future conifer forest on the rehabilitated roadbeds and associated landings.¹⁵⁴ This is approximately the amount of undisturbed potential refuge habitat lost on the Project site. Over the longer term, the mitigation will also result in the restoration of caribou critical habitat from the removal of over 4,000 hectares of disturbed area in the SSA (i.e., when considering the 500 metre buffer) associated with the roads and will enhance potential connectivity within and among ranges. Accordingly, the proposed actions will more than offset possible loss or impairment of potential caribou habitat and connectivity at the Project site.¹⁵⁵
91. At the Panel's request, and in response to Undertaking 18, GenPGM provided additional information to clarify its caribou connectivity analysis. GenPGM's analyses show that there will be no significant effects on caribou habitat connectivity or critical habitat during operations or post-closure.¹⁵⁶ While MECP has indicated that GenPGM's explanation of its connectivity analysis does not adequately address MECP's concerns¹⁵⁷, GenPGM is of the opinion that further quantitative models are not required for analysis of effects on caribou.¹⁵⁸
92. If caribou exist in the mainland Lake Superior Coastal Range, they will be able to move around the Project site.¹⁵⁹ In any event, MECP will ultimately review GenPGM's overall

¹⁵¹ GenPGM, Response to Undertaking 20 – Caribou Offset Measures Under Consideration, March 31, 2022 ([CIAR #1211](#)) at PDF 5-8.

¹⁵² MECP, Closing Remarks related to Species At Risk and Responses to Undertakings 18-21, dated April 7, 2022 ([CIAR # 1271](#)), PDF 3.

¹⁵³ GenPGM is committed to implementing additional measures consistent with the federal recovery strategy and the provincial caribou conservation plan to achieve a net benefit for caribou populations and their habitat.

¹⁵⁴ GenPGM, IR Response 2-1: Woodland Caribou Offsite Mitigation, June 16, 2021 ([CIAR #752](#)), PDF 7.

¹⁵⁵ GenPGM, IR Response 2-1: Woodland Caribou Offsite Mitigation, June 16, 2021 ([CIAR #752](#)), PDF 67.

¹⁵⁶ GenPGM, Response to Undertaking 18 ([CIAR #1209](#)), PDF 5-8.

¹⁵⁷ MECP, Closing Remarks related to Species At Risk and Responses to Undertakings 18 to 21, April 7, 2022 ([CIAR #1271](#)), PDF 2.

¹⁵⁸ Hearing Transcript Volume 9 ([CIAR #1172](#)), PDF 54.

¹⁵⁹ Hearing Transcript Volume 8 ([CIAR #1167](#)), PDF 48-49.

benefit plan through the provincial permitting process following the Panel's environmental assessment.¹⁶⁰

7.1.5. Undertaking 19: Caribou Onsite Rehabilitation

93. In response to Undertaking 19, GenPGM provided additional detail with respect to onsite rehabilitation that would mitigate effects on caribou. GenPGM confirmed, among other things, that a one kilometre wide corridor through the SSA will be restored to conifer-dominated forest to enhance connectivity for caribou. Additionally, GenPGM plans to rehabilitate at least 40% of the 1,100 hectares Project site to even-aged conifer forest.¹⁶¹ GenPGM further described vegetation communities in the post-closure landscape and confirmed that it is committed to site rehabilitation and restoring disturbed areas from construction and operation to a natural landscape supportive of wildlife habitat.¹⁶²

7.1.6. Undertaking 21: Caribou Monitoring

94. GenPGM is also committed to wildlife monitoring. As outlined in GenPGM's response to Undertaking 21, if a caribou does arrive near the site during construction or operations, mitigation plans will be in place to temporarily suspend activities to allow the caribou to safely pass through the site undisturbed.¹⁶³ Further, GenPGM is committed to implementing additional measures consistent with the federal recovery strategy and the provincial Caribou Conservation Plan to achieve a net benefit for caribou populations and their habitat.¹⁶⁴
95. In response to MECP's comments regarding Undertaking 21, in the absence of overall benefit actions, the Project is anticipated to have significant negative effects on caribou or their habitat.¹⁶⁵ However, a suite of overall benefit actions is being proposed by GenPGM which must be approved by Ontario for the Project to proceed, and these will more than compensate for any residual effects. This will result in the Project having a net benefit to boreal caribou in the Lake Superior Coastal Range. Progressive rehabilitation from the site will rely on vegetation trials to support recommendations for seeding mixtures at closure.
96. The Project therefore represents an opportunity to improve the conditions for caribou and/or their habitat in the Lake Superior Coastal Range. The draft Off-site Mitigation Plan is being further refined within the mainland range; together with enhanced caribou population monitoring and other actions, it will form the basis of an overall benefit plan.

¹⁶⁰ [Endangered Species Act](#), 2007, SO 2007, c 6, s 17.

¹⁶¹ GenPGM, Response to Undertaking 21 – Response to ECCC recommendations regarding caribou ([CIAR # 1212](#)) at PDF 1 [**Response to Undertaking 21**].

¹⁶² Response to Undertaking 19 ([CIAR # 1210](#)), PDF 4-5.

¹⁶³ Response to Undertaking 21 ([CIAR # 1212](#)), PDF 4.

¹⁶⁴ Response to Undertaking 21 ([CIAR # 1212](#)), PDF 4.

¹⁶⁵ MECP, Closing Remarks related to Species At Risk and Responses to Undertakings 18 to 21, dated April 7, 2022 ([CIAR # 1271](#)), PDF 4.

7.2. Other Terrestrial Species at Risk

97. In relation to other species at risk, section 6.2.8 of the EIS and the original assessment of effects on birds¹⁶⁶, as well as subsequent responses to information requests from the Panel, provided an assessment of the following effects to species at risk as a result of the Project, including:
- (a) change to confirmed foraging and potential roosting habitat for little brown myotis and northern myotis;
 - (b) change to potential habitat of species at risk birds (i.e., olive-sided flycatcher, eastern wood-pewee, evening grosbeak, bald eagle, peregrine falcon, common nighthawk, and eastern whip-poor-will); and
 - (c) change to confirmed habitat of the Canada warbler, rusty blackbird, and yellow-banded bumble bee.¹⁶⁷
98. The main predicted effects to species at risk include loss of habitat due to forest clearing, sensory disturbance during construction/operations, and potential for collisions with Project infrastructure.¹⁶⁸ Various mitigation measures are proposed and were assessed by GenPGM, including post-closure tree planting, installing 5 bat boxes/rocket boxes near the Project, and only clearing forest outside the maternity season.¹⁶⁹ These mitigation measures will ensure that residual effects on other species at risk will be not significant.¹⁷⁰

7.3. Wildlife

99. The main predicted effects of the Project on wildlife are the removal of habitat, primarily forest, and sensory disturbance during construction and operations.¹⁷¹
100. The EIS concluded that loss of habitat and wildlife populations will be limited to the SSA; wolves and other furbearers, bears, moose, and birds are mobile and will return once the Project ceases, and the effects are at least partly reversible through reclamation, rehabilitation, and habitat restoration.¹⁷² With the mitigation measures proposed by GenPGM, particularly rehabilitation of the site post-closure, the residual effect on wildlife habitat fragmentation and wildlife movement will be not significant.¹⁷³
101. Several small waterbodies in the SSA have the potential to support provincially significant breeding habitat for amphibians.¹⁷⁴ Similar small waterbodies and wetlands, presumably with comparable amphibian populations, are very abundant in the RSA. Nevertheless, as a precautionary measure, larval and adult amphibians from these waterbodies in the SSA

¹⁶⁶ Northern Bioscience, Supporting Information Document 25 – Assessment of Impacts on Birds ([CIAR #234](#)).

¹⁶⁷ EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 5-6.

¹⁶⁸ EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 6.

¹⁶⁹ EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 38.

¹⁷⁰ EIS Addendum, Chapter 6.2.8 ([CIAR #727](#)), PDF 47 and 55.

¹⁷¹ EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 6.

¹⁷² EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 6.

¹⁷³ EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 47.

¹⁷⁴ GenPGM, Repose to IR 6-20: Significant Wildlife Habitat - Amphibians ([CIAR #950](#)).

will be translocated to suitable receptor waterbodies in the LSA or adjacent landscape. No significant residual effects are therefore expected on amphibians or their habitat.

7.4. Migratory Birds

102. Land clearing activities during the nesting season could cause the loss of nests of migratory birds.¹⁷⁵ GenPGM proposes to clear outside of the breeding bird window, and in the event that clearing cannot be completed within the appropriate windows for migratory birds (including late winter), GenPGM has committed to surveying for bird nests in the areas that remain to be harvested for timber. During the Hearing, ECCC confirmed that it is satisfied with GenPGM's survey methodology for nest searches for migratory birds.¹⁷⁶
103. Mitigation measures (e.g., buffer setbacks) will also be employed as necessary to address noise or other disturbance to breeding birds if nests are established during Project operations by species that are protected under federal or provincial legislation and regulations.¹⁷⁷

7.5. Terrain, Soils, and Vegetation

104. With respect to the Project's effects on terrain, soils and vegetation, approximately 3.7 M tonnes of overburden will be excavated within the SSA and this material will be relocated primarily to a single stockpile south of the Mine Rock Storage Area ("**MRSA**").¹⁷⁸ This is a sufficient quantity of material for site reclamation purposes and GenPGM has committed to stockpiling soil and overburden materials for later use in site rehabilitation activities.¹⁷⁹
105. Further, GenPGM has proposed various mitigation measures to avoid or reduce Project-related effects on the terrain and soil VECs. These measures include limiting potential erosion of disturbed areas and/or soil stockpiles by implementing appropriate erosion and sediment-control measures. GenPGM also proposes to limit fugitive dust emissions on the PSMF and MRSA by incorporating design features, including wind breaks.¹⁸⁰
106. The environmental effects assessment for vegetation was prepared in accordance with the requirements of the EIS Guidelines. During operation, the Project will result in minor indirect effects (e.g., hydrology, light, dust) on adjacent forests. Mitigation measures associated with dust creation, for example, include the use of suppressants/water to reduce dust creation and limiting vehicle traffic to previously disturbed and necessary areas only.¹⁸¹ Combined with other mitigation measures, GenPGM predicts that the Project will not adversely affect terrain, soils, or vegetation.

8. AQUATIC ENVIRONMENT

107. The Project is not predicted to result in any significant adverse effects on the aquatic environment.¹⁸² To arrive at this conclusion, the EIS considered project interactions with

¹⁷⁵ EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 39.

¹⁷⁶ Hearing Transcript Volume 8 ([CIAR #1167](#)), PDF 201.

¹⁷⁷ EIS Addendum, Chapter 6.2.7 ([CIAR #727](#)), PDF 35.

¹⁷⁸ EIS Addendum, Chapter 6.2.5: Terrain and Soils ([CIAR #727](#)), PDF 6 [**EIS Addendum, Chapter 6.2.5**].

¹⁷⁹ EIS Addendum, Chapter 6.2.5 ([CIAR #727](#)), PDF 16.

¹⁸⁰ EIS Addendum, Chapter 6.2.5 ([CIAR #727](#)), PDF 16.

¹⁸¹ EIS Addendum, Chapter 6.2.6: Vegetation ([CIAR #727](#)), PDF 24.

¹⁸² EIS Addendum Conclusion ([CIAR #727](#)), PDF 4.

the water quality and quantity, and fish and fish habitat VECs for all Project phases, in accordance with standard environmental assessment practice in Canada.¹⁸³ The effects assessment also considered aquatic Species at Risk.

8.1. Aquatic Species at Risk

108. GenPGM recognizes that Lake Sturgeon (*Acipenser fulvescens*) is important to Biigtigong Nishnaabeg.¹⁸⁴ Lake Sturgeon is an endangered species under the Ontario *Endangered Species Act* and threatened under the federal *Species at Risk Act*.¹⁸⁵
109. The Project does not directly interact with Lake Sturgeon or Lake Sturgeon habitat in the Pic River.¹⁸⁶ MECP agreed with this assessment, noting that GenPGM's conclusions appear reasonable and valid.¹⁸⁷
110. GenPGM has identified several mitigation strategies to protect Lake Sturgeon from potential indirect Project effects, including proactive management of water quality and the mobilization of suspended sediments to the Pic River and respecting setbacks that are protective of potential blasting effects during use of explosives.¹⁸⁸
111. GenPGM could implement a response plan to protect Lake Sturgeon from adverse effects if needed, as need may be indicated from information collected during follow-up monitoring programs.¹⁸⁹
112. Overall, the Project is not predicted to result in residual effects on Lake Sturgeon.¹⁹⁰

8.2. Project Effects on Fish and Fish Habitat

113. The EIS evaluated potential direct and indirect effects on fish and fish habitat by considering several measurement endpoints and associated effects pathways including fish mortality, habitat alteration, disruption or destruction, changes in water quantity, changes in water quality, and changes in sediment quality.¹⁹¹
114. Though residual Project effects were identified on the fish and fish habitat VEC, these effects were characterized as not significant in consideration of proposed mitigation strategies and measures.¹⁹²
115. It is noted specifically that the EIS identified mitigation measures to address fish habitat alteration, disruption or destruction, including avoidance, best management practices, and offsetting pursuant to the federal *Fisheries Act* and its *Metal and Diamond Mining Effluent*

¹⁸³ EIS Addendum Conclusion ([CIAR #727](#)), PDF 5.

¹⁸⁴ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 49 [**Hearing Transcript Volume 7**].

¹⁸⁵ *Species at Risk in Ontario List*, O Reg 23/08, Schedule 2; *Species at Risk Act*, SC 2002, c 29, Schedule 1 Part 4

¹⁸⁶ EIS Addendum Chapter 6.2.8 ([CIAR #727](#)), PDF 58-59.

¹⁸⁷ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 187.

¹⁸⁸ EIS Addendum Chapter 6.2.8 ([CIAR #727](#)), PDF 58-59.

¹⁸⁹ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 187.

¹⁹⁰ EIS Addendum Chapter 6.2.8 ([CIAR #727](#)), PDF 60.

¹⁹¹ EIS Addendum Chapter 6.2.4 ([CIAR #727](#)), PDF 14-15.

¹⁹² EIS Addendum Chapter 6.2.4: Fish and Fish Habitat ([CIAR #727](#)), PDF 29, 38, 42, 45 [**EIS Addendum, Chapter 6.2.4**].

Regulations.¹⁹³ Following the implementation of these mitigation measures, in consultation with Biigtigong Nishnaabeg, the Department of Fisheries and Oceans Canada ("DFO"), and other stakeholders, the residual effects of fish habitat alteration, disruption or destruction are not predicted to be significant.¹⁹⁴ Further considerations of fish and fish habitat offsets and compensation are provided below.

116. Biigtigong Nishnaabeg identified the Northern Brook Lamprey (*Ichthyomyzon fossor*) as an important species.¹⁹⁵ The Northern Brook Lamprey is a species of special concern under both the Ontario *Endangered Species Act* and the federal *Species at Risk Act*.¹⁹⁶ It is noted that species of special concern are not afforded specific legal protection under either provincial or federal legislation. It is also noted that routine lampricide application targeting sea lamprey occurs in the Pic River; however Northern Brook Lamprey are also susceptible to these treatments.¹⁹⁷
117. GenPGM did not identify any Northern Brook Lamprey during the Project's baseline studies.¹⁹⁸ These studies included sampling methods that could yield Northern Brook Lamprey ammocoetes.¹⁹⁹ The most recent record of Northern Brook Lamprey in the Pic River area is from the 1990s at its confluence with Lake Superior. As such, based on GenPGM's assessment, potential impacts on northern brook lamprey is limited to a potential presence at the confluence of the Pic River and Lake Superior approximately 20 kilometers downstream from the Project.²⁰⁰
118. The EIS does not predict any significant adverse residual effects on the Pic River; as such, no interactions are expected between the Project and any potential Northern Brook Lamprey in the Pic River.²⁰¹ Follow-up aquatic monitoring would identify the presence of Northern Brook Lamprey in the study area.²⁰²

8.3. GenPGM has Adequately Characterized Mine Waste Materials

119. GenPGM has characterized the mine materials – mine rock and process solids - that will be excavated, processed and stored and that will interact with waters on site. While the majority of the mine materials, including mine rock and process solids will be Type 1 material and are non-acid generating, some of the materials have been clearly identified as Type 2 (potentially acid generating).

¹⁹³ EIS Addendum Chapter 6.2.4 ([CIAR #727](#)), PDF 31-35; *Fisheries Act*, RSC 1985, c F-14; *Metal and Diamond Mining Effluent Regulations*, SOR/2002-222.

¹⁹⁴ EIS Addendum Chapter 6.2.4 ([CIAR #727](#)), PDF 35.

¹⁹⁵ Hearing Transcript Volume 3 ([CIAR #1138](#)), PDF 44.

¹⁹⁶ *Species at Risk in Ontario List*, O Reg 23/08, Schedule 4; *Species at Risk Act*, SC 2002, c 29, Schedule 1 Part 4.

¹⁹⁷ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 124.

¹⁹⁸ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 109.

¹⁹⁹ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 127.

²⁰⁰ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 107.

²⁰¹ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 127.

²⁰² Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 110.

8.3.1. Geochemistry and Management of Type 2 Mine Materials

120. Management strategies for the storage of Type 2 mine materials have been proposed to mitigate risks of potential acid generation and associated effects on water quality.
121. Biigtigong Nishnaabeg has expressed concern about the potential risk associated with timing for Type 2 mine rock to be covered by water.²⁰³
122. The Type 2 mine rock has sufficient neutralization potential to prevent acid generation for many decades when exposed to air.²⁰⁴ While these rocks will be temporarily stored above water during mining operations, they will not have adequate time to pose a risk of acid generation before they are submerged. Onsite water will also be monitored to confirm the water quality predictions.²⁰⁵

8.4. Water Quality Model

123. Some participants noted concerns with the Project's geochemical predictions. Natural Resources Canada provided some recommendations for follow-up testing to confirm the water quality predictions associated with mine rock.²⁰⁶ The Citizens for Responsible Industry in Northwestern Ontario ("**CRINO**") expressed concern with the modelling of dissolved water contaminants and noted that they believe the Project assumes 100% instantaneous dilution in the Pic River.²⁰⁷ Pays Plat First Nation also noted concerns about the potential effects of acid rock drainage and runoff from the walls of the pit lakes.²⁰⁸
124. The water quality model used in the EIS is robust and comprehensive. It is based on conservative assumptions, considers site-specific inputs derived from many years of testing, and is consistent with standard industry practice. The project's modelling software platform has been used previously for all phases of mine life across Canada and internationally, including in support of approvals for various regulatory instruments such as closure plans, closure plan amendments, and permits to operate mine-related sewage works.²⁰⁹
125. The water quality model fully considered all potential geochemical sources that may contribute to changes in water quality. The included consideration of the effects of drainage and runoff from the walls of the water-filled open pits over the long term. This drainage and runoff were included in the source terms that were developed from metal leaching test results, which were then incorporated into the water quality model.²¹⁰ The open pit water quality will be monitored while filling to confirm water quality.²¹¹

²⁰³ Biigtigong Nishnaabeg First Nation, Written Submission to the Joint Review Panel on the Marathon Palladium Project ([CIAR #1093](#)), PDF 11 ("**BN Written Submissions**").

²⁰⁴ Hearing Transcript Volume 4: March 17, 2022 ([CIAR #1144](#)), PDF 21 [**Hearing Transcript Volume 4**].

²⁰⁵ Hearing Transcript Volume 5 ([CIAR #1239](#)), PDF 38.

²⁰⁶ Natural Resources Canada Written Submission ([CIAR #1079](#)), PDF 24.

²⁰⁷ Hearing Transcript Volume 4 ([CIAR #1144](#)), PDFs 115-117; CRINO Written Submissions ([CIAR #1085](#)), PDFs 9, 13.

²⁰⁸ Pays Plat Written Submissions ([CIAR #1080](#)), PDF 25.

²⁰⁹ Hearing Transcript Volume 5 ([CIAR #1239](#)), PDF 40; Hearing Transcript Volume 4: March 17, 2022 ([CIAR #1144](#)), PDF 23-24 [**Hearing Transcript Volume 4**].

²¹⁰ Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 22.

²¹¹ Hearing Transcript Volume 5 ([CIAR #1239](#)), PDF 155-156.

126. Mixing in receiving environments was not assumed to be instantaneous. The water quality modelling considered mixing and the spatial extent of the mixing zone through a standard industry modeling platform called CORMIX.²¹²
127. Additional testing will be conducted on the mine materials to follow up on Natural Resources Canada's recommendation.²¹³ GenPGM is also committed to field scale testing of run-of-mine rock to confirm the results of the laboratory testing for water quality.²¹⁴
128. Ultimately, the Project will monitor the water quality of the receiving waterbody at every phase of the project. Provincial approvals require this monitoring for ongoing model validation and will include requirements to refine the model with updated data and, if necessary, take corrective action for any constituents that exceed established benchmarks.²¹⁵ The monitoring program will be developed together with input from our Indigenous community partners.

8.5. Surface and Groundwater Quantity

129. The EIS did not predict a significant adverse effect on surface or groundwater quantity. While many of the Project's activities interact with these VEC components, the Project's mitigation measures avoid or reduce the effects to below the pre-defined thresholds of significance.

8.5.1. Surface Water Quantity

130. Some participants have noted specific concerns with reductions in surface water flows in local watersheds. Biigtigong Nishnaabeg and the MECP noted that the Angler Creek (Stream 6) watershed will have reduced flow until the PSMF has been reclaimed and pre-mining drainage patterns have been re-established.²¹⁶ MECP, DFO, and ECCC noted concerns with the use of a flow-based screening factor.²¹⁷
131. GenPGM acknowledges the importance of Angler Creek to Biigtigong Nishnaabeg, Pays Plat First Nation and other Indigenous communities, and has committed to providing appropriate accommodations for impacts to traditional land and resource uses.²¹⁸ The reduction in flow is the result of the PSMF occupying approximately one-third of the sub watershed – and it is necessary to mitigate impacts on water quality, as the Project will collect seepage and runoff from the PSMF to protect the downstream environment.²¹⁹ Nonetheless, GenPGM will monitor Angler Creek during operations and implement adaptive management measures if necessary.²²⁰ Furthermore, the fish habitat lost due to

²¹² Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 187.

²¹³ Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 308-309; Hearing Transcript Volume 5 ([CIAR #1239](#)), PDF 14.

²¹⁴ Hearing Transcript Volume 5 ([CIAR #1239](#)), PDF 18.

²¹⁵ Ministry of the Environment, Conservation and Parks, Written Submission to the Joint Review Panel on the Marathon Palladium Project (February 25, 2022) ([CIAR #1081](#)), PDF 33 [**MECP Submissions**].

²¹⁶ BN Written Submissions, ([CIAR #1093](#)), PDF 11.

²¹⁷ MECP Submissions, ([CIAR #1081](#)) PDF 36-42; Fisheries and Oceans Canada, Written Submission to the Joint Review Panel on the Marathon Palladium Project (February 25, 2022) ([CIAR #1082](#)), PDF 13-14 [**DFO Submissions**].

²¹⁸ EIS Addendum Table of Commitments ([CIAR #727](#)), PDF 9.

²¹⁹ Fish Offset Plan ([CIAR #983](#)), PDF 22.

²²⁰ Fish Offset Plan ([CIAR #983](#)), PDF 56.

the reduction in flow has been accounted for in the fish offsetting plan.²²¹ These measures, and additional commitments regarding Angler Creek monitoring and fish and fish habitats, are described in greater detail below with respect to Undertaking 31.

132. GenPGM has provided mean monthly flows in response to Information Request 5-5,²²² met with MECP and DFO on December 17, 2021,²²³ and conservatively quantified the potential effects from changes to flow in the draft offsetting plan submitted on January 14, 2022.²²⁴ MECP, ECCC, and DFO no further questions on this approach.²²⁵ Additional details will be provided to regulators through the permitting processes.
133. Overall, the Project, in consideration of proposed mitigations, is not predicted to have a significant residual adverse effect on surface water quantity. GenPGM has high confidence in this prediction, based on its application of the precautionary principle and use of conservative assumptions in its estimates. Further, the hydrological effects of the Project are common to mining operations, are well understood, and have been quantified through modeling based on long-term flow records from local and regional Water Survey of Canada stations.

8.5.2. Groundwater Quantity

134. Participants have generally supported GenPGM's prediction that the Project will not have a significant residual adverse effect on groundwater quantity. The MNDMNR noted that GenPGM has a good understanding of groundwater baseline conditions, and that GenPGM's responses to groundwater information requests are adequate.
135. ECCC noted that it believed seepage had not been fully accounted for in the modelling for the PSMF and MRSA.²²⁶ The assessment of effects for groundwater fully accounted for all seepage: for the MRSA, the remaining seepage was captured as toe seepage in the contact water collection ditches and/or directly captured within the open pit as a result of backfilling the pit with mine rock, and for the PSMF, the remaining seepage was that which was captured by the PSMF ponds as part of the overall project water balance model.
136. Overall, in consideration of proposed mitigations, the Project is not predicted to have a significant residual effect on groundwater quantity. GenPGM has high confidence in this prediction, as the groundwater flow model was calibrated to an acceptable range of error and used conservative assumptions throughout.

²²¹ Fish Offset Plan ([CIAR #983](#)), PDF 29.

²²² GenPGM, Responses to IR 5-5: Effects to Stream Flow and Stream Restoration, November 2, 2021 ([CIAR #950](#)), PDF 9-29 .

²²³ Fisheries and Oceans Canada and other Federal and Provincial Authorities, Letter re Meeting Summary of December 17 with the Proponent (December 17, 2021) ([CIAR #965](#)).

²²⁴ Fish Offset Plan ([CIAR #983](#)).

²²⁵ MECP Submissions, ([CIAR #1081](#)), PDF 36-37; DFO Submissions ([CIAR #1082](#)) PDF 15; ECCC Submissions, PDF 39.

²²⁶ Environment and Climate Change Canada, Written Submission to the Joint Review Panel on the Marathon Palladium Project (February 25, 2022, Updated March 22, 2022) ([CIAR #1086](#)), PDF 27 (“**ECCC Submissions**”).

8.6. Stormwater Management

137. The Project's conservative stormwater management design is a key mitigation for surface water quantity and quality. The PSMF and Water Management Pond have been sized to fully store an environmental design storm of a 1 in 100 year, 24-hour precipitation event and simultaneous 30-day spring snowmelt without uncontrolled release.²²⁷ The design will be further scrutinized by regulators as part of the permitting process for detailed design.

8.7. Fish and Fish Habitat Offsets and Compensation

138. GenPGM recognized from the outset that the Project will affect fish and fish habitat, despite the implementation of measures to avoid and mitigate these effects, and require offsets to mitigate residual effects. The EIS Addendum included a draft fish habitat offset strategy, which was further developed in response to comments throughout the environmental assessment process.²²⁸ GenPGM's most recent submission also addresses regulatory requirements for the Project under the *Fisheries Act* and the *Metal and Diamond Mining Effluent Regulations*.²²⁹
139. DFO has indicated that they believe that offsetting the Project's effects on fish and fish habitat is achievable.²³⁰ GenPGM will continue to work with regulators to finalize the offsetting plan and to develop a monitoring plan. The comments received at this stage are typical for preliminary plans and GenPGM agrees with the regulators that they can be addressed during the regulatory phase of the Project.
140. Biigtigong Nishnaabeg requested that the fish offsetting plan include community programs.²³¹ They also noted a concern that the EIS did not assess sub-lethal effects on fish.²³²
141. GenPGM will continue to collaborate with Indigenous communities, including Biigtigong Nishnaabeg, and work to integrate community focused measures in the offsetting plan prior to DFO approval.²³³
142. The predictive effects assessment considered sub-lethal effects on fish.²³⁴ Concentrations of constituents of concern will remain within levels that are protective of all stages of aquatic life and/or existing background levels.
143. Overall, the Project is not predicted to have a significant residual adverse effect on fish and fish habitat after considering the Project's measures that avoid, mitigate and offset potential effects. GenPGM has high confidence in this prediction, as it was conducted using conservative assumptions, industry standards, and it incorporates the input of applicable agencies and stakeholders.

²²⁷ Feasibility Study ([CIAR #741](#)), PDF 477.

²²⁸ EIS Addendum Appendix D6 –Preliminary Fish Habitat Offset Strategy ([CIAR #727](#)), PDF 24; Fish Offset Plan ([CIAR #983](#)).

²²⁹ *Fisheries Act*, RSC 1985, c F-14.

²³⁰ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 87.

²³¹ BN Written Submissions ([CIAR #1093](#)), PDF 21-22.

²³² BN Written Submissions ([CIAR #1093](#)), PDF 13.

²³³ Fish Offset Plan ([CIAR #983](#)), PDF 34.

²³⁴ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 20.

8.8. Modeling of Predicted Surface Water Quality

144. The EIS did not predict a significant adverse effect on the surface or groundwater quality during any mine phase.²³⁵ While many of the Project's activities interact with these VEC components, the Project's mitigation measures avoid or reduce the effects to levels below the pre-defined thresholds of significance related to the protection of aquatic life and/or the uses of water for other purposes (e.g., drinking, recreation).
145. GenPGM has taken a quantitative approach to assessing potential surface water effects using predictive modelling. This approach is based on an industry standard conservative mass balance approach.²³⁶

8.8.1. Mercury

146. Biigtigong Nishnaabeg, MECP, ECCC, and Michipicoten First Nation noted concerns about potentially elevated mercury levels in receiving waterbodies.²³⁷ Specific concerns were raised regarding potential mercury methylation in Hare Lake, mercury mobilization from land clearing activities, and the mercury detection limit.
147. The Project is not predicted to change mercury levels in the aquatic environment. Testing has indicated that mine wastes, such as process solids and mine rock, are not associated with mercury.²³⁸ The predictive water quality assessment indicates no incremental changes in mercury concentrations in Hare Lake, the Stream 106 sub watershed, or the Pic River during any mine phase.²³⁹
148. The Project is not predicted to result in conditions that would enhance mercury methylation.²⁴⁰
149. The risk of any mercury mobilization from land clearing will be mitigated. Water from disturbed areas will be managed in local ponds; it will not be released to the environment without testing for mercury.²⁴¹ During the Aquatic Environment Hearing session, MECP and ECCC confirmed that they do not have concerns regarding mercury mobilization given GenPGM's proposed mitigation.²⁴²
150. The Project's mercury analyses have been completed with detection limits less than the Canadian Council of Ministers of the Environment (“**CCME**”) water quality objectives for the protection of aquatic life since 2014.²⁴³ 21 of 22 samples collected in the Pic River since 2014 were reported as less than the lowest detection limit requested by participants.

²³⁵ EIS Addendum, Chapter 6.2.3: Water Quantity and Quality ([CIAR #727](#)), PDF 72, 83.

²³⁶ Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 59.

²³⁷ BN Written Submissions ([CIAR #1093](#)), PDF 15-16; MECP Submissions ([CIAR #1081](#)), PDF 55, 62-64; ECCC Submissions ([CIAR #1086](#)), PDF 31-34; Michipicoten First Nation, Written Submissions to the Joint Review Panel on the Marathon Palladium Project (February 24, 2022) ([CIAR #1088](#)), PDF 1-3.

²³⁸ Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 60

²³⁹ Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 62, 65.

²⁴⁰ Hearing Transcript Volume 11: March 29, 2022 ([CIAR #1201](#)), PDFs 164-166.

²⁴¹ Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 69-71.

²⁴² Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 98-100.

²⁴³ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 234.

The one sample that was above the detection limit was below the CCME water quality objective.²⁴⁴

151. GenPGM is committed to additional testing and monitoring to ensure that the Project does not contribute to mercury levels in the environment. Any samples collected going forward will use the lower detection limit.²⁴⁵ MECP, as the primary regulator for the permitting process, supports this approach.²⁴⁶ GenPGM has also committed to developing a comprehensive mercury/methylmercury monitoring program with adaptive management triggers.²⁴⁷
152. GenPGM is also developing a comprehensive multi-media mercury monitoring program focusing on the local aquatic receiving environment with Biigtigong Nishnaabeg that will evaluate EIS predictions and conditions moving forward.²⁴⁸ GenPGM and Biigtigong Nishnaabeg have agreed on the general scope, timing, and duration of this monitoring program, as detailed in Undertaking 31 below.

8.8.2. Phosphorous

153. GenPGM has confirmed that phosphorous levels will be managed during operations.²⁴⁹ In particular, GenPGM has identified the need to manage phosphorus to ensure that discharge to Hare Lake can be done in a manner that does not promote nutrient enrichment of Hare Lake.²⁵⁰
154. Options for managing phosphorus include refining water management strategies to address phosphorus at the known source and/or through standard and readily available treatment methods that exist²⁵¹ including, precipitation, coagulation, chemical amendments, and biological treatment.²⁵²
155. Water quality will be monitored closely throughout the operation of the project, and phosphorous will be treated if required to reduce levels below the required benchmarks.²⁵³

8.9. Groundwater Quality

156. Participants did not raise any specific concerns regarding the EIS' or EIS Addendum's assessment of groundwater quality. MECP noted that it will require further hydrogeological investigations at the PSMF in the permitting process, as well as monitoring and contingency plans.²⁵⁴ MNDMNR noted that GenPGM had a good understanding of

²⁴⁴ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 234.

²⁴⁵ Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 67.

²⁴⁶ MECP Submissions ([CIAR #1081](#)), PDF 67.

²⁴⁷ Hearing Transcript Volume 5 ([CIAR #1149](#)), PDF 106.

²⁴⁸ Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 23.

²⁴⁹ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 235.

²⁵⁰ Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 62.

²⁵¹ Hearing Transcript Volume 7 ([CIAR #1160](#)), PDF 235.

²⁵² Hearing Transcript Volume 4 ([CIAR #1144](#)), PDF 275.

²⁵³ IR Response 5-11 ([CIAR #950](#)), PDF 6-7.

²⁵⁴ MECP Submissions ([CIAR #1081](#)), PDF 26-27.

baseline groundwater conditions, and that the responses to information requests were adequate.²⁵⁵

157. Overall, the Project is not predicted to have a significant residual effect on groundwater quality. GenPGM has high confidence in this prediction, as the groundwater flow model was calibrated to an acceptable range of error and used conservative assumptions throughout.

9. HUMAN ENVIRONMENT

158. The EIS and EIS Addendum set out the robust assessment performed by GenPGM which concluded that the Project will not cause significant adverse effects to the Human Environment. The assessment specifically considered effects of the Project on air quality, noise, greenhouse gas emissions, the socio-economic environment and human health. These subjects were further explored during the Hearing when GenPGM and its subject-matter experts clarified and explained their processes and conclusions regarding the lack of adverse effects and, in the case of socio-economics, the positive effects that will result from the Project.

9.1. Air Quality

159. The EIS Addendum sets out an in-depth assessment of the Project's impact on air quality and associated risks on human health.²⁵⁶ In concluding that the Project will not have a significant adverse effect on air quality, an updated human health risk assessment ("HHRA") was completed. GenPGM also engaged with MECP regarding its comments on the air quality assessment in the EIS and provided further air quality assessment details to MECP.²⁵⁷
160. The air quality modeling used conservative emissions estimates, maximum equipment operating times and schedules, and conservative background air quality levels that resulted in overestimated ambient air quality effects.²⁵⁸ The HHRA considered the principal air quality parameters that could be affected by the Project, including constituents of potential concern ("CoPCs") such as benzene, benzo(a)pyrene, nickel, nitrogen dioxide, diesel exhaust and crystalline silica. Conservative assumptions were made in the HHRA assessment of air quality including utilizing maximum concentrations and conservative exposure assumptions resulting in overestimated human exposure to CoPCs in air in the LSA.²⁵⁹ The MECP approved of GenPGM's air quality model and calculations following discussions off the record between the parties during the Hearing.
161. With the proposed mitigation measures, Project activities are not predicted to cause adverse effects on air quality during any phase of the Project.

²⁵⁵ Ministry of Northern Development and Mines Branch of the Ministry of Northern Development, Mines, Natural Resources and Forestry, Written Submissions to the Joint Review Panel on the Marathon Palladium Project ([CIAR #1076](#)), PDF 3.

²⁵⁶ EIS Addendum, Chapter 6 ([CIAR #727](#)), PDF 24.

²⁵⁷ Hearing Transcript Volume 12 ([CIAR #1193](#)), PDF 176-177.

²⁵⁸ EIS Addendum, Chapter 6.3, 6.4, 6.5, 6.7, Accidents and Malfunctions, Effects of the Environment on the Project, Capacity of Renewable Resources, Cumulative Effects Analysis, Summary of Environmental Effects Assessment ([CIAR #727](#)), PDF 24, 29- 36 [**EIS Addendum, Chapter 6.3-6.7**].

²⁵⁹ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 59.

9.2. Noise and Noise Modelling

162. Predictive modelling was used to determine potential Project-related noise emissions in consideration of worst-case years with respect to noise.²⁶⁰ The modelling was comprehensive in terms of source type emissions – the assessment considered noise and ground vibration emitted from stationary equipment operating in the SSA, traffic on the access road, Highway 17 and in the Town of Marathon, the rail load-out facility and blasting.
163. Project activities are not predicted generate noise levels in excess of relevant federal and provincial noise guidelines during any phase of the Project.²⁶¹ The mitigation measures that will be employed will prevent any noise exceeding the guidelines to focus on Project implementation strategies, such as purchasing vehicles and equipment that meet applicable noise suppression regulations and limiting operational windows at key locations at key times of the day (e.g., limiting equipment operations in the southern portion of the PSMF during nighttime hours, and scheduling concentrate delivery at times of the day to reduce complaints).²⁶²
164. At the Hearing, GenPGM confirmed the difference between the noise modelling that predicts potential noise generated from the Project and the actual noise expected during operations. Specifically, GenPGM clarified details regarding the number of trucks that are expected to deliver concentrate to the rail loadout facility per day versus how the potential effects were predicted, and the conservative manner by which the assessment was done. The modeling used to predict potential effects of the trucks, specific to noise, was conservative and assumed a worst-case scenario.²⁶³
165. Concentrate truck movement to the rail loadout facility was assessed during a worst-case daytime hour and over the period 7:00 am to 11:00 pm. Concentrate truck movement was modelled for 10 trucks at a peak hour, however GenPGM confirmed that this is much higher than what will in fact occur during operations, reflecting currently anticipated mine production.²⁶⁴ Concentrate truck movements were also modelled for 30 trucks over the entire daytime period. If market conditions are favourable, the Project could potentially generate a total of 40 trucks per day (i.e., an additional 10 trucks spread over the rail loadout daily operations period).²⁶⁵ Noise levels would likely remain below the criteria that would trigger mitigation measures.²⁶⁶
166. MECP acknowledged that additional trucks to those used in the model could be a concern for additional coupling noise by rail cars at the rail load out. GenPGM confirmed that if additional rail cars are required for the extra trucks, this could be accommodated through operational conditions to meet the coupling noise limits.²⁶⁷ MECP agreed with GenPGM's

²⁶⁰ EIS Addendum, Chapter 6.2.2: Acoustic Environment ([CIAR #727](#)), PDF 7-8 [**EIS Addendum, Chapter 6.2.2**].

²⁶¹ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 56.

²⁶² EIS Addendum, Chapter 6.2.2 ([CIAR #727](#)), PDF 7-8.

²⁶³ Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 14-15.

²⁶⁴ Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 15.

²⁶⁵ Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 14-15.

²⁶⁶ Hearing Transcript Volume 10 ([CIAR #1193](#)), PDF 130.

²⁶⁷ Hearing Transcript Volume 10 ([CIAR #1193](#)), PDF 168-169.

blast noise and vibration impacts, and that GenPGM will meet applicable provincial blasting overpressure and vibration limits during construction and operations.²⁶⁸

167. A comprehensive follow-up program will be implemented that will include measurement of ambient noise levels at identified sensitive receptor locations and measurement of overpressure and vibration levels upon commencement of blasting operations. The follow-up program will be assessed and modified as site-specific data become available in an adaptive management framework.²⁶⁹

9.3. Drinking Water Quality

168. Predicted concentrations of constituents in surface water are not predicted to increase above water quality guidelines, for protection of either drinking water or aquatic life. Groundwater that may be affected by the Project will have no hydraulic connection to drinking water supply wells.²⁷⁰

9.4. Human Health

169. GenPGM completed an assessment of the potential effects on human health during all phases of the Project that may occur as a result of changes to air quality, water quality, noise, and country foods. Receptors, including members of the public who may live or visit the area, as well as wildlife, were considered.
170. With the implementation of mitigation measures to mitigate and manage Project-related emissions and through proposed follow-up and monitoring programs, Project activities are not predicted to cause adverse effects on human health during any phase of the Project.

9.4.1. Country Food

171. Country foods are the traditional foods that are trapped, fished, hunted, harvested or grown for subsistence, or medicinal, or spiritual purposes, outside of the commercial food chain. The HHRA developed a conceptual model of exposure pathways for country food consumers, including subsistence harvesters and seasonal residents within the Project study area.²⁷¹
172. Based on screening of predicted constituent concentrations in air and surface water, environmental and country food concentrations are not expected to change substantially from background where country foods are likely to be harvested.²⁷²
173. Project-related air and water emissions are not expected to cause CoPCs to accumulate in country foods to levels of concern for human health.²⁷³

²⁶⁸ Hearing Transcript Volume 12 ([CIAR #1193](#)), PDF 150-151.

²⁶⁹ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 56.

²⁷⁰ GenPGM, "Marathon Palladium Project, Human Health Presentation" ([CIAR #1165](#)), PDF 18.

²⁷¹ EIS Addendum, Appendix D-10 ([CIAR #727](#)), PDF 136.

²⁷² EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 48.

²⁷³ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 48.

174. GenPGM is engaging with Indigenous communities on a country food monitoring program that will enable verification of this expectation into the future.²⁷⁴

9.4.2. Inhalation Risk and Diesel Particulate Matter

175. GenPGM concluded that with mitigation and environmental protection measures implemented, residual effects on human health from changes in air quality are not expected to be significant during any phase of mine life.²⁷⁵ Health Canada suggested that further consideration of the health effects from diesel exhaust, including diesel particulate matter, be provided through either (a) a quantitative assessment of risk using the associated unit risk value published by the CalEPA or (b) a robust qualitative assessment of the carcinogenic risk of diesel exhaust associated with the project.²⁷⁶
176. GenPGM has provided a robust qualitative assessment of the effects of diesel exhaust as envisioned by Health Canada.²⁷⁷ The results of GenPGM's assessment show that diesel exhaust is not expected to be a significant source of air pollution risk from inhalation during the life of the Project.²⁷⁸ GenPGM has also proposed significant mitigation measures, such as using low sulphur diesel for equipment and exploring the use of biodiesel in all mine equipment.²⁷⁹

9.5. The Project will have a Positive Socio-Economic Effect

177. The EIS, EIS Addendum and responses to information requests from the Panel set out the overall positive socio-economic effects of the Project for all communities, including Indigenous communities.²⁸⁰ These positive effects for the Town of Marathon were again emphasized by dozens of submissions to the Panel by local and regional residents, Mayor Rick Dumas, and the Marathon representatives at the Hearing.²⁸¹ The socio-economic assessment evaluated changes in demographics, accommodation availability, education and training, community infrastructure and services, health and emergency services, employment and income among other things.²⁸²
178. The EIS assessed social factors, economic factors, human health, resource use and navigable waters. The residual adverse effects of the Project on these factors were assessed as "not significant".²⁸³

²⁷⁴ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 48.

²⁷⁵ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 41.

²⁷⁶ From Health Canada to the Joint Review Panel re: Comments on the EIS Addendum for the Marathon Palladium Project, July 26, 2021 ([CIAR #905](#)) PDFs 8-9, Hearing Transcript Volume 10 ([CIAR #1193](#)), PDFs 39-43.

²⁷⁷ GenPGM, Response to IR 6-32: Diesel Exhaust Health Risks, November 2, 2021 ([CIAR #950](#)), PDF 5 [Response to IR 6-32].

²⁷⁸ Response to IR 6-32 ([CIAR #950](#)), PDF 5.

²⁷⁹ Response to IR 6-32 ([CIAR #950](#)), PDF 6.

²⁸⁰ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 5; IR Response 16.5 ([CIAR #398](#)); IR Responses 16.1, 16.2, 16.7 ([CIAR #457](#)); IR Response 21.2 ([CIAR #461](#)); IR Response 16.3 ([CIAR #477](#)); SIR Response 7 ([CIAR #576](#)); SIR Response 8 ([CIAR #575](#)).

²⁸¹ Hearing Transcript Volume 11 ([CIAR #1201](#)), PDF 17-18.

²⁸² EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 5.

²⁸³ EIS 2012, Chapter 5: Existing Environment ([CIAR #224](#)), PDF 128.

179. The approach to updating the assessment in the EIS Addendum included a determination of significance based on updated environmental conditions in the SSA, LSA and RSA, a recognition of the updated standards, criteria, and other thresholds that inform the determination of significance, and a consideration of Project refinements.²⁸⁴ Changes to economy and employment, infrastructure and services, and land and resource use were assessed to not have adverse effects when mitigation and enhancement measures are applied.²⁸⁵

9.5.1. Housing for Workers to be provided by GenPGM

180. GenPGM recognizes that the availability of housing within the RSA is limited, with some towns experiencing very low vacancy rates for owned and temporary accommodations due to increased demand from mining activity in the region. With declining populations in the RSA²⁸⁶, and housing being added through recent and expected developments in the Town of Marathon,²⁸⁷ the availability of housing for any new workers moving to the area to work at the mine was identified by GenPGM as creating a need for further housing.
181. GenPGM will provide facilities both for the construction and the operational phase that will accommodate workers from outside the RSA. Based on the predicted work force and the current availability of housing and accommodations within the RSA, it is anticipated that housing for an additional 240²⁸⁸ and 86²⁸⁹ workers will be required during construction and operation, respectively.
182. During construction, workers will be housed in the Valard Construction Camp, an existing camp located in the Town of Marathon.²⁹⁰ The Valard Construction Camp, which can currently house 350 people, will be available to transient workers at the beginning of the construction phase and can be expanded to house up to 700 people.²⁹¹
183. An Accommodations Complex, which is for 60 people but can be expanded to accommodate 180, is planned for use during the operations phase. The Accommodations Complex, is expected to be tied to the Town of Marathon's water and sewage systems.²⁹² As conceptually designed, the Accommodations Complex will be a two-storey structure with one bedroom and washroom and a shared kitchen for every four apartments.
184. In a worst-case scenario where 100% of the pre-construction and construction labour force is transient (for an estimated total of 870 people), the Accommodations Complex could be expanded earlier to ensure all workers are accommodated.²⁹³

²⁸⁴ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 8.

²⁸⁵ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 23-47.

²⁸⁶ EIS Addendum, Chapter 6.3-6.7, ([CIAR #727](#)), PDF 71.

²⁸⁷ Mayor Rick Dumas, Hearing Transcript Volume 11 ([CIAR #1201](#)), PDF 14.

²⁸⁸ EIS Addendum, Chapter 6.2.9 ([CIAR #727](#)), PDF 35.

²⁸⁹ GenPGM, Response to IR 2-6: Socio-economic – Labour market and employee accommodations, June 17, 2021 ([CIAR #757](#)), PDF 4 [**Response to IR 2-6**].

²⁹⁰ Response to IR 2-6 ([CIAR #757](#)), PDF 3.

²⁹¹ Response to IR 2-6 ([CIAR #757](#)), PDF 3.

²⁹² Response to IR 2-6 ([CIAR #757](#)), PDF 5.

²⁹³ Response to IR 2-6 ([CIAR #757](#)), PDF 4.

185. It is anticipated that 80-90% of the operations phase workforce will be local and not require accommodation, as the majority of the workforce will come from within the RSA.²⁹⁴ However, in a worst-case scenario where 50% of these workers are transient, 106 of them would require accommodations. If the Accommodations Complex is expanded to 180 rooms, it will be more than sufficient to house the operations workforce.

8.5.2 Maintaining access to land and resources

186. Continued access and use of the LSA will not be affected by the Project, with tourism and recreational activities expected to continue at or near current levels elsewhere in the area.²⁹⁵ While recreational activities will be restricted in the SSA for safety and security reasons, access will be provided through the mine site, specifically from the guard house located at the end of the access road.²⁹⁶ Indigenous users will be guided through the site to one of the existing trails to the north of the SSA so that they can continue to access areas north of the proposed mine, such as Bamooos Lake.²⁹⁷

9.6. The EIS Comprehensively Considered the Effect of Climate Change on the Project

187. The total estimated GHG emissions from the operations phase of the Project are comparable to emissions from other mines of similar size based on a global comparison assessment performed by SKARN.²⁹⁸ The emissions are negligible when compared to provincial and federal CO₂e emission rates.²⁹⁹ Further, if approved, the Project will be essential in providing the critical metals that are necessary to support Canada's ongoing energy transition.³⁰⁰
188. Environment North stated in their written submissions and in their remarks during the Hearing that GenPGM's consideration of climate effects of the Project are insufficient and fail to meet the purposes set out in Section 4(1)(h) of CEEA 2012.³⁰¹
189. Respectfully, Environment North's assertion is incorrect. Section 4(1)(h) of CEEA 2012 states that one of the purposes of the act is to encourage federal authorities to take actions that promote sustainable development in order to achieve or maintain a healthy environment.
190. Climate change considerations were described in the Original EIS and the supporting greenhouse gas and climate change assessment, and much of that information remains relevant.³⁰² The Original EIS screened Project phases and associated activities for potential climate change related sensitivities and then considered such sensitivities more

²⁹⁴ Response to IR 2-6 ([CIAR #757](#)), PDF 4.

²⁹⁵ Hearing Transcript Volume 12, ([CIAR #1204](#)), PDF 20-21.

²⁹⁶ Hearing Transcript Volume 12, ([CIAR #1204](#)), PDF 20.

²⁹⁷ Hearing Transcript Volume 12, ([CIAR #1204](#)), PDF 20.

²⁹⁸ SKARN Report ([CIAR #1199](#)); Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 12.

²⁹⁹ EIS 2012, Supporting Information No. 8 – Green House Gas and Climate Change Assessment for the Marathon PGM-Cu Project ([CIAR #227](#)), PDF 29.

³⁰⁰ [Canada, Critical Minerals](#); [Ontario, Mining and Minerals](#).

³⁰¹ Environment North Written Submissions, ([CIAR #902](#)), PDF 1-2 ; Hearing Transcript Volume 2 ([CIAR #1135](#)), PDF 73-76; [CEAA 2012](#), s 4(1)(h).

³⁰² EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 27.

fully. The assessment was reconsidered in light of the new project plan for the EIS Addendum and no new specific project sensitivities were identified.³⁰³

191. The GHG emissions estimates are set out in Attachment A to the response to IR 6-4.³⁰⁴ The primary source of Project-related GHG emissions will be derived from the combustion of fuels. During construction, total annual CO₂e emissions are predicted to range from 5.9 to 24.3 kilotonnes. During operations, total annual CO₂e emissions are predicted to average 61.6 kilotonnes, ranging from 33.1 to 81.9 kilotonnes. Canada's total GHG emissions in 2018 were 729 megatonnes of CO₂e.³⁰⁵
192. GenPGM also provided the SKARN report in response to Undertaking 24, which compares the carbon footprint of the Project on a CO₂e per tonne of copper produced to industry peers globally. The SKARN report concludes that the Project is the second lowest emitter of the 13 producing copper mines (included in the SKARN dataset) in Canada, and in the top four percent for lowest emissions among global peers.³⁰⁶
193. Accordingly, these total estimated GHG emissions from all phases of the Project are comparable to emissions from other mines of similar size, and negligible when compared to provincial and federal CO₂e emission rates.³⁰⁷

9.7. Accidents and Malfunctions

194. The Original EIS and EIS Addendum assessed potential accidents and malfunctions that could be associated with the Project based on experience with other similar projects, internal risks assessment discussions, the EIS Guidelines, and through consultation with Indigenous communities and public sessions.³⁰⁸ Each potential scenario was considered with regard to its probability, nature, magnitude, consequences, emergency response procedures and mitigation.³⁰⁹ Each scenario was also assigned a probability rating of remote, low, medium or high.³¹⁰
195. In total, 20 potential accident and malfunction scenarios were assessed in the Original EIS and the EIS Addendum. Each potential accident and malfunction scenario was assessed with a view to specific mitigation and response measures.³¹¹
196. For example, during the Hearing, the Panel asked whether GenPGM anticipated or assessed any scenarios where chronic effects or toxicity may occur with regard to a PSMF or MRSA overflow event. GenPGM responded that its assessment acknowledged the possibility that chronic effect levels could be exceeded, but that its quantitative predictions

³⁰³ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 28.

³⁰⁴ GenPGM, IR Response 6-4: Greenhouse Gas Emissions, November 9, 2021 ([CIAR #950](#)).

³⁰⁵ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 60.

³⁰⁶ SKARN Report, Response to Undertaking 24 ([CIAR #1199](#)); Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 12.

³⁰⁷ EIS 2012, Supporting Information No. 8 – Green House Gas and Climate Change Assessment for the Marathon PGM-Cu Project ([CIAR #227](#)), PDF 29.

³⁰⁸ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 7.

³⁰⁹ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 7.

³¹⁰ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 7.

³¹¹ EIS Addendum, Chapter 6.3-6.7 ([CIAR #727](#)), PDF 7-26.

conclude that there would be no significant adverse effects based on duration of exposure.³¹²

197. The overall conclusion from the accidents and malfunctions assessment was that the overall risks of such events were low in consideration of proposed safeguards and design features.

10. DECOMMISSIONING AND CLOSURE

10.1. Decommissioning and Closure Process

198. Conceptually, the closure phase includes activities that are designed to reclaim land within the Project footprint to permit future use by resident biota and for traditional and other land-use activities. This includes decommissioning and closure of the Project site in a manner that reduces the potential effects on the social and natural environment and returns the site to an end use that is supported by Indigenous peoples, the public, and the government.³¹³
199. The Decommissioning and Closure process for the Project will follow a step-wise approach that includes:
- (a) Progressive reclamation³¹⁴ during operations, where construction areas and portions of the mine site that reach their maximum extent will be progressively reclaimed;
 - (b) Site decommissioning and the initial active closure phase following operations (planned for 5 years); and
 - (c) Post-closure phase following the completion of substantial reclamation and restoration activities (estimated to be 40 years).³¹⁵
200. The specific activities that will occur during the active closure phase include, among other things, decommissioning and removal of on-site and off-site support infrastructure, the Process Plant, explosives magazine facilities. Type 2 material remaining on the surface will be placed into the open pits for permanent storage. There will also be reclamation of the PSMF, MRSA, Process Plant area and other developed areas.³¹⁶
201. GenPGM will confirm the success of site restoration and stabilization, through a comprehensive inspection and monitoring program and will provide maintenance as needed.

10.2. Environmental Management

202. Should the Project advance to the next phase of development upon approval of the environmental assessment, GenPGM will implement an environmental management system that integrates the precautionary approach throughout all phases of the Project.

³¹² Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 184-185.

³¹³ EIS Addendum Chapter 1 ([CIAR #727](#)), PDF 46.

³¹⁴ Draft Closure Plan, Section 4.0 Progressive Rehabilitation ([CIAR #232](#)), PDF 1.

³¹⁵ EIS Addendum Chapter 1 ([CIAR #727](#)), PDF 40.

³¹⁶ EIS Addendum Chapter 1 ([CIAR #727](#)), PDF 46-47.

The Project's environmental management system is focused on continuous improvement and adaptive management. Follow-up and monitoring programs will be an important component of this management system, as the data they will generate will be used to verify the accuracy of predicted effects and the effectiveness of proposed mitigation measures.³¹⁷ Many of the monitoring programs were, or will be, designed through consultation with Indigenous communities and in consideration of TK/TLRU reports provided by Indigenous communities.³¹⁸

10.2.1. Integration of Adaptive Management and the Precautionary Principle

203. GenPGM has applied precautionary principles through the environmental assessment. For example, the EIS addendum used conservative assumptions in its modelling, for the effectiveness of proposed mitigations, or for assuming a species' presence in the Project area.³¹⁹ Furthermore, GenPGM has committed to confirming model predictions through follow-up programs and implementing adaptive management measures that protect the environment that may be needed. These measures appropriately address uncertainties in the environmental assessment.³²⁰
204. CRINO raised suggestions for ensuring environmental monitoring and compliance with applicable regulations.³²¹ They also noted concerns related to financial assurance for closure with past mining projects— particularly the option of self-assurance.³²² CRINO concluded by urging GenPGM to contribute to the wellbeing of the Project's community.³²³
205. As stated during the Hearing, GenPGM's Project implementation strategy addresses CRINO's concerns. The Project will employ an adaptive management process, and will engage Indigenous communities and the appropriate regulatory agencies as part of its rigorous environmental monitoring process.³²⁴ GenPGM will report the results of its monitoring to both the local community (through its environmental committees) and the appropriate regulators.³²⁵ This will ensure that regulators and other stakeholders have access to the most up-to-date data. In addition, GenPGM will not be seeking the self-assurance provisions referred to by CRINO.³²⁶
206. Overall, the Project's environmental management system provides GenPGM with the ability to address and accommodate any new circumstances. This will ensure that the Project's potential effects on the environment are effectively monitored, that GenPGM remains dedicated with all of its commitments, and that the Project can respond to any evolving conditions in a proactive and effective manner.

³¹⁷ EIS Addendum Chapter 7: Environmental Management ([CIAR #727](#)), PDF 14.

³¹⁸ EIS Addendum Chapter 7: Environmental Management ([CIAR #727](#)), PDF 16.

³¹⁹ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 122.

³²⁰ Response to Undertaking 31 ([CIAR #1276](#)).

³²¹ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 160.

³²² Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 164-165.

³²³ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 172-173.

³²⁴ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 194-195.

³²⁵ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 185, 195.

³²⁶ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 214.

11. UNDERTAKING 31

207. Since GenPGM first engaged in consultation with Biigtigong Nishnaabeg, the company has continued to learn about the community's history and connection to the land and water of its traditional territory. The importance of this connection – and to the Biigtig Zibi or Pic River specifically – was further emphasized and discussed during the Hearing. The discussion below sets out GenPGM's plans for protection of the Pic River, Angler Creek, and caribou populations, and its consultation with Pays Plat First Nation and Biigtigong Nishnaabeg regarding the Pic River and other commitments as detailed in the response to Undertaking 31.

11.1. GenPGM Commitments

208. As set out above and detailed in GenPGM's filed material, GenPGM has a long history of engagement and consultation with Biigtigong Nishnaabeg. As explained by Chief Duncan Michano in his opening statement at the Hearing, a balance must be struck between development on one hand, and ensuring the integrity of Biigtigong Nishnaabeg's land for future generations on the other.³²⁷
209. The balance includes the need for socio-economic benefits while also taking care of the environment. Biigtigong Nishnaabeg's physical and spiritual connection to, and the critical importance of its land and water cannot be understated. This is particularly central to Biigtigong Nishnaabeg community's connection to the Biigtig Zibi, or Pic River.
210. Toward the achievement of this balance, GenPGM and Biigtigong Nishnaabeg are parties to an Agreement in Principle and are in the process of establishing a Community Benefit Agreement to address potential Project effects. These benefits include training, jobs, business opportunities and financial participation, which among other things addresses impacts to TRLU, loss of access, financial benefits, and Biigtigong Nishnaabeg's Community Trapline.³²⁸
211. After extensive consultation with impacted parties, GenPGM has also made numerous voluntary commitments that meet or exceed regulatory requirements. These commitments pertain to the implementation of mitigation measures, environmental protection measures, contingency planning, monitoring, and reclamation/rehabilitation of the site upon closure.³²⁹
212. Undertaking 31 was the Panel's request for GenPGM to provide a list of commitments regarding the Project, "including all the mitigation measures, monitoring plans, follow-up programs and associated EMPs that GenPGM has committed to in the EIS, IR responses, and during the Hearing."³³⁰ In accordance with Undertaking 31, GenPGM has compiled a list of all commitments made during the Hearing, including those related to monitoring programs and mitigation measures.³³¹
213. GenPGM and Biigtigong Nishnaabeg have also consulted about the commitment list set out in GenPGM's response to Undertaking 31. GenPGM and Biigtigong Nishnaabeg jointly

³²⁷ Hearing Transcript Volume 1 ([CIAR #1127](#)), PDF 8.

³²⁸ EIS Addendum Chapter 6.2.12: Indigenous Considerations ([CIAR #727](#)), PDF 45.

³²⁹ EIS Addendum Chapter 8: Table of Commitments ([CIAR #727](#)).

³³⁰ Joint Review Panel, Decision re: Undertaking 31 and Closing Remarks ([CIAR #1266](#)), PDF 1.

³³¹ Response to Undertaking 31 ([CIAR #1276](#)).

requested a 4-week extension to the Hearing timeline in order to meaningfully consult about the response to Undertaking 31. During these weeks, Biigtigong Nishnaabeg and GenPGM have worked closely to resolve or identify continuing commitments to resolve outstanding issues.³³² In particular, this consultation provided both parties with the opportunity to address Biigtigong Nishnaabeg's primary concerns regarding mercury concentrations and discharge to the Biigtig Zibi, among other matters.

214. GenPGM acknowledges that Biigtigong Nishnaabeg has concerns, and addressing these concerns throughout the life of the Project is a priority for the company. The CCT has also acknowledged their responsibility to address pre-existing issues and any adverse socio-economic concerns.³³³ GenPGM is committed to continuing to work with Biigtigong Nishnaabeg throughout the life of the Project.
215. GenPGM also consulted with the Pays Plat First Nation regarding the response to Undertaking 31.³³⁴ On April 25th, 2022, GenPGM met with the Pays Plat First Nation to review commitments made to the Pays Plat First Nation during the Panel Hearing.³³⁵ GenPGM collaborated with the Pays Plat First Nation on the language for inclusion into Undertaking 31.³³⁶
216. The commitments set out in Undertaking 31 will not have an impact on the conclusions set out in the EIS and EIS Addendum described above.

11.1.1. Closure Plan

217. GenPGM is required to submit a detailed closure plan to the Province in order for the Project to proceed. In the response to Undertaking 31, GenPGM committed to obtaining Biigtigong Nishnaabeg's consent for that closure plan prior to filing.³³⁷ GenPGM has also committed to reviewing feasible closure plan alternatives with Biigtigong Nishnaabeg on an ongoing basis.³³⁸ The development of the Project's closure plan will include an assessment of the technically and economically feasible post-closure discharge options. At the Hearing, Jeremy Dart, the Environmental Manager for GenPGM, stated:

We've heard the concerns from BN regarding the discharge during closure is not socially acceptable to the community and we're committed to ongoing discussions to explore whether options that can avoid discharge during closing would be technically and economically feasible.³³⁹

218. GenPGM expects to address Biigtigong Nishnaabeg's concerns during the development of the regulatory closure plan.³⁴⁰ However, given Biigtigong Nishnaabeg's position as a key stakeholder in closure planning, GenPGM has committed to allowing Biigtigong

³³² Biigtigong Nishnaabeg Closing Remarks, ([CIAR #1282](#)) PDF 2.

³³³ CCT Report ([CIAR #1083](#)), PDF 27.

³³⁴ Hearing Transcript Volume 14: April 1, 2022 ([CIAR #1215](#)), PDF 115.

³³⁵ Response to Undertaking 31 ([CIAR #1276](#)) PDF 1.

³³⁶ Response to Undertaking 31 ([CIAR #1276](#)) PDF 1.

³³⁷ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³³⁸ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³³⁹ Hearing Transcript, Volume 5 ([CIAR #1149](#)), PDF 149.

³⁴⁰ Hearing Transcript, Volume 5 ([CIAR #1149](#)), PDF 150.

Nishnaabeg to lead the development of the Project's closure plan subsequent to the Panel process.³⁴¹

219. To that end, a joint request four-week extension was submitted to further engage with Biigtigong Nishnaabeg and other Indigenous communities about their concerns. Engagement with Indigenous communities, and particularly Biigtigong Nishnaabeg, is absolutely essential in preparing a final regulatory closure plan.

11.1.2. Protection of the Pic River

220. Since GenPGM first engaged in consultation with Biigtigong Nishnaabeg, the company has continued to learn about the community's history and connection to the land and water of its traditional territory. The importance of this connection – and to the Biigtig Zibi or Pic River specifically – was further emphasized and discussed during the Hearing.

221. Undertaking 31 outlines GenPGM's commitment to protect the Pic River.³⁴² GenPGM recognizes that water is gold to Biigtigong Nishnaabeg and the source of powerful teachings. Undertaking 31's individual commitments address concerns regarding:

- (a) mercury and mercury methylation at all phases of the Project;
- (b) water quality monitoring, including mercury and phosphorous;
- (c) up-to-date data on fish and fish habitat;
- (d) pit lake water quality modelling;
- (e) community programs for fish and fish habitat offsetting; and
- (f) environmental monitoring with adaptive management triggers.

222. These commitments are designed to ensure that the Project is done right, not only for Biigtigong Nishnaabeg but for all local communities, and that there are no significant adverse effects on the environment.

223. Some participants raised concerns during the hearing regarding the Project's closure plans and its post-closure discharge. GenPGM is legally required to submit a closure plan to MNDMNR before the Project proceeds, and Undertaking 31 adds GenPGM's commitment to obtaining Biigtigong Nishnaabeg's consent for this plan.³⁴³ This ensures that the Project will not have any significant adverse effects on the environment or Biigtigong Nishnaabeg's use and stewardship of the Pic River watershed.

11.1.3. Maintenance of Angler Creek (Stream 6) System

224. Any flow reduction to Angler Creek (Stream 6) will be offset through the Fisheries Offsetting and Compensation Plan, which will be approved by the appropriate regulators.³⁴⁴ However, GenPGM recognizes that Angler Creek is an extremely important

³⁴¹ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³⁴² Response to Undertaking 31 ([CIAR #1276](#)) PDF 78-79.

³⁴³ Response to Undertaking 31 ([CIAR #1276](#)) PDF 78-79.

³⁴⁴ EIS Addendum, Chapter 6.2.4 ([CIAR #727](#)), PDF 31-32.

area to the past, present and future of Biigtigong Nishnaabeg, and that traditional and cultural use of Angler Creek by Biigtigong Nishnaabeg could be impacted during the operations phase of the Project.³⁴⁵ As such, Undertaking 31 confirms that GenPGM will commit to the following additional measures to mitigate impacts to Angler Creek:

- (a) GenPGM will assess, with Biigtigong Nishnaabeg, technically and economically feasible supplemental flow options and will commit to minimizing disruptions to Angler Creek where economically feasible for the operations phase of the Project;³⁴⁶
- (b) GenPGM will develop and implement a monitoring program with Biigtigong Nishnaabeg for Angler Creek prior to the start of construction to monitor any impact of changes to the watershed to fish, fish habitat, other aquatic life, and traditional and cultural uses of Angler Creek by Biigtigong Nishnaabeg.³⁴⁷

11.1.4. Discharge from Pit

225. GenPGM has committed to using the water collection system for the PSMF to allow water to move south from the Pit to be managed within the PSMF.³⁴⁸

11.1.5. Water Quality Monitoring Plans and Programs

226. As described above, GenPGM has committed to working in conjunction with Biigtigong Nishnaabeg to develop and implement a site-wide water management plan to maintain care and control of water during all mine phases for the purpose of protecting downstream uses.³⁴⁹ This water management plan will include specific monitoring components related to mercury and phosphorus.
227. Further, GenPGM will obtain Biigtigong Nishnaabeg's approval of any mercury monitoring plans and will engage with Biigtigong Nishnaabeg to develop the mercury monitoring plan and other site-wide water management plans and programs.³⁵⁰
228. Undertaking 31 also lists several other commitments GenPGM has made regarding water quality monitoring plans and programs, including implementing best practices to prevent mercury methylation, additional up-to-date data collection, the development of a separate pit lake water quality model for each pit lake, making best efforts to avoid the temporary storage of type 2 waste rock, and engaging with and supporting Biigtigong Nishnaabeg's water quality and aquatic monitoring efforts.³⁵¹

11.1.6. Fish and Fish Habitat Compensation and Offsetting

229. GenPGM has committed to engaging and providing reasonable support to Biigtigong Nishnaabeg in designing community programs for fish and fish habitat offsetting as part

³⁴⁵ Biigtigong Nishnaabeg Closing Remarks, ([CIAR #1282](#)) PDF 3; Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³⁴⁶ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³⁴⁷ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77..

³⁴⁸ Response to Undertaking 31 ([CIAR #1276](#)) PDF 77.

³⁴⁹ Response to Undertaking 31 ([CIAR #1276](#)) PDF 78.

³⁵⁰ Response to Undertaking 31 ([CIAR #1276](#)) PDF 78.

³⁵¹ Response to Undertaking 31 ([CIAR #1276](#)) PDFs 78-79.

of their Fish and Fish Habitat Offsetting and Compensation Plan and will support a Biigtigong Nishnaabeg Fish Hatchery program.³⁵²

230. GenPGM also added a commitment to including community-based projects proposed by Biigtigong Nishnaabeg, Pays Plat First Nation and potentially other communities in the Updated Proposed Fish Habitat Offsetting Strategy and Compensation Plan.³⁵³

11.1.7. Fish and Fish Habitat Compensation and Offsetting

231. GenPGM has committed to engaging and providing reasonable support to Biigtigong Nishnaabeg in designing community programs for fish and fish habitat offsetting as part of their Fish and Fish Habitat Offsetting and Compensation Plan and will support a Biigtigong Nishnaabeg Fish Hatchery program.³⁵⁴

11.1.8. Accidents and Malfunctions

232. As set out in Undertaking 31, GenPGM will engage with Biigtigong Nishnaabeg to establish an Independent Tailings Review Board and will share the Engineer of Record Dam Breach Assessment with Biigtigong Nishnaabeg.³⁵⁵

11.1.9. End Land Use Planning

233. GenPGM will engage with Biigtigong Nishnaabeg in end land use planning for the Project site and ensure the site supports habitats and species of interest to Biigtigong Nishnaabeg.³⁵⁶

11.1.10. Socio-Economic Impacts

234. GenPGM has committed to developing a socio-economic management and monitoring plan (SEMMP) to measure and mitigate the socio-economic impacts of the Project on Biigtigong Nishnaabeg.³⁵⁷

11.1.11. Traplines and Access to Territory

235. GenPGM will provide reasonable support and engage with Biigtigong Nishnaabeg to secure a replacement for a community trapline and support the proposed crown accommodation measure to create a bypass road (Gaffhook Lake Access) with access controlled by Biigtigong Nishnaabeg.³⁵⁸

11.1.12. Moose, Caribou and Other Species of Importance

236. GenPGM has provided specific commitments to engage with Biigtigong Nishnaabeg to revise the current off-site caribou mitigations to consider current landscape and cultural

³⁵² Response to Undertaking 31 ([CIAR #1276](#)) PDF 79.

³⁵³ Response to Undertaking 31 ([CIAR #1276](#)) PDF 9.

³⁵⁴ Response to Undertaking 31 ([CIAR #1276](#)) PDF 79.

³⁵⁵ Response to Undertaking 31 ([CIAR #1276](#)) PDF 79.

³⁵⁶ Response to Undertaking 31 ([CIAR #1276](#)) PDF 79.

³⁵⁷ Response to Undertaking 31 ([CIAR #1276](#)) PDF 80.

³⁵⁸ Response to Undertaking 31 ([CIAR #1276](#)) PDF 80.

proposals from Biigtigong Nishnaabeg.³⁵⁹ GenPGM will also engage with Biigtigong Nishnaabeg to determine and implement mitigation and monitoring programs for species of high importance to Biigtigong Nishnaabeg.³⁶⁰

11.1.13. Social Services, Safety and Health

237. Lastly, Undertaking 31 sets out specific commitments by GenPGM to provide supports for social services, safety, and health measures for Biigtigong Nishnaabeg.³⁶¹ These include:³⁶²

- (a) engaging with Biigtigong Nishnaabeg to support the proposed Crown accommodation measure for funding of a social service plan and targeted health services plan for Biigtigong Nishnaabeg employed through the Project;
- (b) engaging with Biigtigong Nishnaabeg to minimize negative impacts of the Project on community infrastructure and social services;
- (c) developing, in collaboration with Biigtigong Nishnaabeg, a mandatory, cultural competency training for all mine workers that will include content on Residential schools, the TRC, Missing and Murdered Indigenous Women and Girls, and Indigenous rights, including Biigtigong Nishnaabeg's asserted exclusive Aboriginal title rights;
- (d) developing and implementing, with Biigtigong Nishnaabeg, workplace policies and procedures to address and minimize risks associated with sexual harassment, violence, and discrimination;
- (e) engaging with Biigtigong Nishnaabeg and the Town of Marathon to create a joint Emergency Response Plan for the Project;
- (f) developing and implementing, in consultation with Biigtigong Nishnaabeg and other relevant authorities, a sampling program to assess concentrations of contaminants of potential concern in country foods, a follow-up program to verify the accuracy of the effects assessments predictions related to changes in concentrations of contaminants of potential concern in country foods, and a country foods monitoring program;
- (g) including the soils and terrain, vegetation, wildlife and fish, and fish habitat monitoring programs to monitor the potential impacts of the Project on human health and establishing rigorous baselines for metal concentrations in foods and medicines of importance to Biigtigong Nishnaabeg.

12. CONCLUSION

238. The Project, if approved, will mine PGM and copper, which are essential for Canada's ongoing energy transition and in line with Canada and Ontario's recently released critical minerals strategies. As detailed above, the Project stands to bring much needed economic

³⁵⁹ Response to Undertaking 31 ([CIAR #1276](#)) PDF 80.

³⁶⁰ Response to Undertaking 31 ([CIAR #1276](#)) PDF 80.

³⁶¹ Response to Undertaking 31 ([CIAR #1276](#)) PDF 80.

³⁶² Response to Undertaking 31 ([CIAR #1276](#)) PDF 80-81.

benefits to local and regional communities and Indigenous groups without any significant long-term adverse effects on the natural and socio-economic environments.

239. GenPGM and its predecessors have demonstrated a commitment to environmental protection and the precautionary principle throughout the 11 years that the Project has been subject to the environmental assessment process. Environmental effects have been conservatively predicted and mitigation and preventative measures related to Project impacts with VECs have been proposed. Further, comprehensive follow-up monitoring and adaptive management programs have been proposed to appropriately address uncertainties in the environmental assessment.
240. Based on a global comparison assessment performed by SKARN, the Project is the second lowest GHG emitter of the 13 producing copper mines included in the SKARN dataset in Canada, and in the top four percent for lowest emissions among global peers.³⁶³
241. In addition to incorporating the precautionary principle into the Project, GenPGM has given voluntarily commitments that, in some instances, even provide a net benefit to the environment and local communities. For example, while there have been no documented caribou in the SSA and the Project would not adversely affect caribou survival, GenPGM overall benefit plan includes habitat improvement measures that may actually contribute to a net benefit for caribou and their habitat.³⁶⁴
242. Robust consultation with Indigenous communities has been an essential element of GenPGM's engagement during the environmental assessment process, and GenPGM is committed to continuing its close relationship with Indigenous partners throughout the life of the Project. However, GenPGM notes that it is not within the Panel's mandate to adjudicate on the satisfaction of the duty to consult, the nature of the consultation (and, if required, accommodation), or whether the Project would be an infringement of potential or established Aboriginal or Treaty rights.
243. GenPGM acknowledges that Biigtigong Nishnaabeg asserts exclusive Aboriginal title to the territory in which the Project is located and is a Rights holder in the Project area. GenPGM also acknowledges the concerns raised by Biigtigong Nishnaabeg regarding aspects of the closure plan for the project and has committed to obtaining Biigtigong Nishnaabeg's consent to its final closure plan. GenPGM notes that the current plan before the Panel protects the Biigtig Zibi, or Pic River, at all phases of the Project and forms the basis for the environmental assessment, which determined that no significant adverse environmental effects are expected for the Pic River.³⁶⁵
244. The Project will result in significant socio-economic benefits for a region facing economic hardship, providing hundreds of jobs for local residents, generating over \$1 billion in tax revenues for Ontario and Canada and \$1.5 million a year for the Town of Marathon.³⁶⁶ The Town of Marathon has specifically noted GenPGM's willingness to support local

³⁶³ SKARN Report, Response to Undertaking 24 ([CIAR #1199](#)); Hearing Transcript Volume 12 ([CIAR #1204](#)), PDF 12.

³⁶⁴ Residual Effects on Caribou ([CIAR #950](#)), PDF 15; Hearing Transcript Volume 8 ([CIAR #1167](#)), PDF 39.

³⁶⁵ Hearing Transcript Volume 13 ([CIAR #1213](#)), PDF 117-118.

³⁶⁶ GenPGM, "Marathon Palladium Project Presentation: Project Purpose and Alternative Means", March 9, 2022 ([CIAR #1107](#)), PDF 16.

communities and has voiced its strong support for the Project throughout the assessment process.

245. Based on the evidence described above and on the record, GenPGM respectfully submits that the Panel should have a high degree of confidence that the Project is not predicted to result in any significant adverse environmental effects, and that the Project would provide significant socio-economic benefits for Indigenous communities, including Biigtigong Nishnaabeg, as well as the Town of Marathon, surrounding region, and Ontario and Canada.
246. GenPGM respectfully requests that the Panel to issue its report as expeditiously as possible within the overall time limit established under CEAA 2012. This is in keeping with Section 3.22 of the Panel's Terms of Reference, which states that the Panel will submit its report at the earliest possible date.³⁶⁷

All of which is respectfully submitted,

May 18 2022

<Original signed by>

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³⁶⁷ Terms of Reference ([CIAR #730](#)), PDF 19.