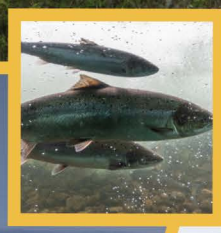
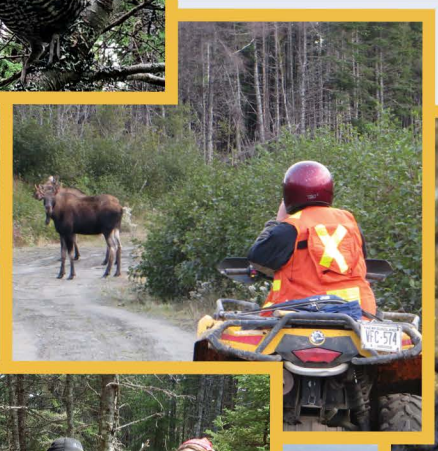
MARATHON GOLD

Valentine Gold Project Environmental Impact Statement

September 2020





Valentine Gold Project:
Environmental Impact Statement

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Executive Summary

Marathon Gold Corporation (Marathon) is proposing to develop an open pit gold mine near Valentine Lake, located in the central region of the Island of Newfoundland, southwest of the Town of Millertown, Newfoundland and Labrador (NL). The proposed Valentine Gold Project (the Project) will include two open pits, waste rock piles, crushing and stockpiling areas, conventional milling and processing facilities (the mill), a tailings management facility (TMF), personnel accommodations, and supporting infrastructure, including roads, on-site power lines, buildings, and water and effluent management facilities. The construction of the Project is expected to take approximately 16 to 20 months, followed by an estimated mine operation life of 12 years. When mining is complete, the operation will be closed, and Project components will be rehabilitated and monitored according to the applicable regulations in place at the time of closure.

On April 5, 2019, Marathon submitted a Project Description to the Impact Assessment Agency of Canada (IAAC) as required by the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012). IAAC reviewed the Project Description and determined that an environmental assessment (EA) would be required. Given the timing of the Project Description submission and the determination by IAAC, review of the Project is continuing under CEAA 2012, rather than under the *Impact Assessment Act*. On April 16, 2019, Marathon submitted the same Project Description to the provincial government for review as a Registration document of an undertaking, as required by the NL *Environmental Protection Act* (NL EPA). On June 21, 2019, the Minister of Environment, Climate Change and Municipalities announced the Project would require the preparation of an Environmental Impact Statement (EIS).

Although the federal and provincial EA processes are not legislatively coordinated, this EIS has been prepared to meet the requirements of both CEAA 2012 and the NL EPA. The EIS has also been prepared to meet the requirements of the Project-specific guidelines issued by both the federal and provincial governments. Tables of concordance are included below (Table E.1 and E.2) to demonstrate compliance with both the Federal EIS Guidelines (Appendix 1A) and the Provincial EIS Guidelines (Appendix 1B) and to indicate where specifically in the EIS requirements have been addressed. As required by the Federal EIS Guidelines, a stand-alone Summary of the EIS has also been prepared and is available in English and French. The stand-alone summary also fulfills the requirements in the Provincial EIS Guidelines for a Plain Language Summary.

Engagement

Marathon is committed to operating the Project within a sustainable development framework which reduces harm to the environment, contributes to local communities, respects human and Indigenous rights, and adheres to openness and transparency in operations. One of the key principles of sustainable development is meaningful engagement with the individuals, communities, groups and organizations interested in, or potentially affected by, the Project in order to build and maintain positive, long term and mutually beneficial relationships.

In keeping with Marathon's corporate values (Respect, Accountability, Transparency, Inclusion and Prosperity) and as required by the Federal EIS Guidelines and Provincial EIS Guidelines, Marathon has engaged with relevant government departments and agencies, Indigenous groups, and stakeholder organizations, including communities, business and industry organizations, fish and wildlife organizations, environmental non-governmental organizations and individuals who may be affected by, or have an interest in, the Project. The results of this engagement are summarized in Chapter 3 and have helped inform the scope of the environmental assessment.

The Federal EIS Guidelines identify Qalipu Mi'kmaq First Nation (Qalipu) and Miawpukek First Nation (Miawpukek) as Indigenous groups that may be affected by the Project. No other Indigenous groups have come forward nor have any been identified by the federal or provincial government or by Marathon as having an interest in, or being potentially affected by, the Project. Through ongoing engagement, Marathon understands the principal issues identified by Qalipu and Miawpukek include:

- Need for continuing engagement and cooperation
- Access to economic opportunities, with specific reference to education and training, employment and contracting opportunities
- Environmental stewardship and involvement in monitoring initiatives
- Effects on wildlife (particularly caribou) and resulting effects on current use of land and resources
- Effects on species at risk
- Effects on water quality and quantity and fish habitat
- Design of TMF and use of cyanide
- Socio-economic effects including positive effects on employment and business opportunities

Benefits of the Project

Based on an independent economic assessment completed by Strategic Concepts Inc., the Project will have substantial economic impacts for both NL and Canada. Marathon will spend approximately $2.0 billion Canadian dollars (CAD) to develop and operate the Project over its planned 15-year life (includes construction and closure). This includes $272 million in pre-production capital expenditures, $288 million in post-production capital expenditures, and $1.4 billion in operating expenditures. The key economic impacts on the economy and the federal and provincial treasuries are[1]:

- Creation of over 19,000 full-time equivalents (FTE) of total employment (direct, indirect and induced) in Canada, including approximately 11,000 FTEs in NL
- Average annual employment (direct, indirect and induced) of nearly 1,300 FTEs of employment in Canada, including an average of 725 FTEs annually within NL
- Generation of approximately $1.3 billion in income to workers and business within Canada, including $750 million to workers and businesses located within NL
- Contribution of $3.6 billion to Canada's gross domestic product (GDP), which includes $2.9 billion to NL's GDP

[1]Treasury impacts based on US$1,350 per ounce of gold and an exchange rate of $0.75 US/CAD. A full-time equivalent of employment is typically equivalent to approximately 2,000 hours of work. For this model, 2,000 hours was used to measure full-time equivalents of employment from capital expenditures and 2,190 hours per year for operation jobs. The latter is based on the planned work schedule of a 24-hour operation with two 12-hour shifts.

- Generation of $292 million in federal government revenues
- Contribution of approximately $400 million ($27 million on an average annual basis) in incremental revenues to the treasury of NL

Scope and Methods

The environmental effects assessment has used a precautionary, conservative approach. Conservative assumptions have been made, with the objective of overestimating rather than underestimating potential adverse effects. The EIS examines the effects or changes to the physical, biological and socio-economic environment that could result from the Project. The assessment focuses on valued components (VCs), which were selected based on several factors, including requirements of the Provincial and Federal EIS Guidelines, results of engagement, the role of the VC in the ecosystem, and the importance placed on it by Indigenous groups and stakeholders. The following VCs are assessed in the EIS:

- Atmospheric Environment
- Groundwater Resources
- Surface Water Resources
- Fish and Fish Habitat
- Vegetation, Wetlands, Terrain and Soils
- Avifauna
- Caribou
- Other Wildlife
- Community Services and Infrastructure
- Community Health
- Employment and Economy
- Land and Resource Use
- Indigenous Groups
- Historic Resources
- Dam Infrastructure

The EIS assesses the potential effects of both routine Project activities and accidental events on each VC, as well as potential cumulative effects resulting from the combination of Project effects and other past, present, or likely future activities and projects in the area. The activities associated with each phase of the Project considered in the environmental assessment are as follows:

- Construction
  - Access road upgrade/realignment
  - Construction related transportation along access road
  - Mine site preparation and earthworks
  - Construction/installation of infrastructure and equipment
  - Emissions, discharges and wastes
  - Employment and expenditures

- Operation
  - Operation-related transportation along access road
  - Open pit mining
  - Soil and rock management
  - Ore milling and processing
  - Tailings management facility (TMF)
  - Water management (intake, use, collection and release)
  - Utilities, infrastructure and other facilities
  - Emissions, discharges and wastes
  - Employment and expenditures
- Decommissioning, rehabilitation and closure
  - Progressive rehabilitation
  - Decommissioning of mine features and infrastructure
  - Decommissioning, rehabilitation and closure-related transportation along access road
  - Closure rehabilitation
  - Post-closure and post-closure monitoring
  - Emissions, discharges and wastes
  - Employment and expenditures

Accidental events or malfunctions identified and considered in the EIS include: a TMF malfunction, an open pit slope failure, a slope failure of the stockpiles or waste rock piles, a fuel and hazardous materials spill, an unplanned release of contact water, a sewage treatment plant failure, over blasting, a fire/explosion, a vehicle accident and a watercourse crossing failure.

The environmental effects assessment considers the degree and nature of change that routine Project activities and accidental events may have on the existing environment for each VC. To help understand the existing conditions for each VC, numerous baseline studies were conducted between 2011 and 2020, and these are included with this EIS submission as Baseline Study Appendices (BSAs). The assessment describes how the Project may interact with aspects of the environment to potentially result in an environmental effect and characterizes the residual environmental effects of the Project. Residual environmental effects are those that remain after the application of mitigation. The significance of adverse residual environmental effects is then determined using criteria developed for each VC. Effects of the environment (e.g., extreme weather and effects of climate change) on the Project are also assessed.

For each VC, mitigation measures are proposed to reduce or eliminate potential adverse effects that may result from the Project. Many of the potential adverse environmental effects can be managed by following accepted mining procedures and best management practices. Marathon will comply with relevant environmental requirements outlined in applicable legislation and regulations, commitments made in this EIS, and conditions of EA approval and regulatory authorizations. Where required, EA follow-up and monitoring programs are proposed to verify key environmental effects predictions, the effectiveness of the key mitigation, and/or compliance with regulatory and permitting requirements.

Summary of Residual Effects

This EIS documents the results of the environmental assessment of the Valentine Gold Project proposed by Marathon Gold Corporation. This EIS has been prepared in accordance with the requirements of CEAA 2012 and the provincial NL EPA.

Fifteen VCs were identified as relevant and important to the environmental assessment based on regulatory requirements and engagement with Indigenous groups and stakeholders. These were: Atmospheric Environment; Groundwater Resources; Surface Water Resources; Fish and Fish Habitat; Vegetation, Wetlands, Terrain and Soils; Avifauna; Caribou; Other Wildlife; Community Services and Infrastructure; Community Health; Employment and Economy; Land and Resource Use; Indigenous Groups; Historic Resources; and Dam Infrastructure.

The assessment included a characterization of the existing conditions within the spatial boundaries of each VC, including a discussion of the influences of past and present physical activities on the VC, leading to the current conditions. The assessment followed standard EA methods for describing Project interactions with each of the VCs and determining the potential environmental effects, including areas of federal jurisdiction, associated with the Project for the construction, operation, and decommissioning, rehabilitation and closure phases. The environmental effects assessment used a precautionary, conservative approach. Conservative assumptions have been made, so that potential adverse effects are generally overestimated rather than underestimated. Mitigation and environmental protection measures have been identified to reduce or eliminate adverse effects and the residual environmental effects have been characterized including a determination of their significance.

The environmental assessment predicts that routine Project activities will not cause significant adverse environmental effects on any of the VCs, with the exception of caribou. Similar results were determined for cumulative effects, where Project effects are considered in combination with the effects of other projects (past, present, and reasonably foreseeable future projects).

The general results of the assessment that relate to the key issues raised by regulators, Indigenous groups, and stakeholders, are summarized as follows:

- Employment and Economic Benefits: There are substantial employment and economic benefits to flow from the Project to the benefit of local communities, the central region of NL, and the province. The development of an on-site accommodations camp for all workers, on-site medical and emergency response resources will reduce potential effects on local community infrastructure and services. Local hiring and contracting policies for direct employment and contracts, and induced employment and business in the region will result in substantial benefits to the local and regional economy over a 15-year period (including construction, operation and decommissioning, rehabilitation and closure).
- Water Resources: The environmental assessment has determined there are no significant residual effects on groundwater or surface water resources resulting from routine Project activities, or from the cumulative effects of the Project in combination with other past, present, or reasonably foreseeable future projects. In the event of an accidental event such as a large spill of hazardous materials or effluent release, the risk of effects occurring is reduced based on contingency and emergency

response plans. For a dam breach of the full-height TMF, there will be surface water effects in the Victoria River and a relatively small portion of Red Indian Lake only, and the effects are substantially reduced 2 km downstream from the TMF, in the Victoria River.

- Fish and Fish Habitat: The environmental assessment has determined there are no significant effects on fish and fish habitat that will result from routine Project activities, or from the cumulative effects of the Project in combination with other past, present, or reasonably foreseeable future projects. Some small streams and ponds on site will be affected by Project development and operation, most of which is habitat for threespine stickleback only. Marathon will develop and implement a Fish Habitat Offsetting Plan in consultation and with approval of Fisheries and Oceans Canada (DFO) that will create replacement habitat in a nearby location. For accidental events, a potential TMF dam breach carries the most substantial risk. The assessment has determined that for the worst-case TMF dam breach, effects will be limited to the Victoria River and a relatively small area of Red Indian Lake, and therefore will not affect Atlantic salmon resources in the Exploits River.
- Caribou: Potential Project residual effects of change in habitat and mortality risk are predicted to be low magnitude for all four herds. The magnitude for change in movement for the Gaff Topsails, Grey River and La Poile herds is also predicted to be low. However, the residual effect for change in movement for the Buchans herd is predicted to be high due to the amount of overlap of the Project with an existing migration corridor, and the proportion of collared caribou that use the path overlapping the Project. The Buchans herd, which is part of South Coast sub-population, represents 13.7% of the total caribou population on the Island. The prediction of a significant effect is established on a conservative basis, and reflects both the uncertainty in how Project activities may affect the migratory movement of the Buchans herd and what the long-term effects on the herd may be, and the uncertainty of success of the proposed mitigation measures. Marathon is committed to working with regulators, Indigenous groups and stakeholders to develop comprehensive programs to monitor migration patterns and populations of the caribou herds in the area, and in particular the Buchans herd. Marathon is currently working with provincial regulators to conduct ongoing baseline monitoring programs and plans to continue and adapt these monitoring programs over the life of the Project.
- Victoria Lake Reservoir and Victoria Dam: The environmental assessment has determined there are no significant effects on Victoria Lake Reservoir or Victoria Dam resulting from routine Project activities, or from the cumulative effects of the Project in combination with other past, present, or reasonably foreseeable future projects. Due to Marathon's re-location of the TMF downstream of the Victoria Dam, a worst-case TMF dam breach is also not expected to impact the Victoria Dam.

Follow-up and monitoring programs have been proposed for other VCs, as applicable, to verify the accuracy of the residual effects assessment, determine the effectiveness of mitigation measures, and monitor compliance with regulatory approvals, permits and authorizations.

In the unlikely event of a worst-case industrial accident or malfunction which results in a large-scale release into the environment, there is a potential for significant residual adverse effects to VCs. However, the risk of a significant effect occurring is low, given the Project design, maintenance and monitoring measures that will be in place to reduce the risk of an accident or malfunction occurring. In addition, emergency response plans and contingency measures will be in place to limit the extent and nature of potential environmental effects in the event of an accident or malfunction.

Marathon is committed to the successful development and operation of the Valentine Gold Project, and envisions an enterprise balancing commercial success with a safe working environment, effective environmental management, and the creation of lasting social benefit. Marathon will implement high standards of environmental performance as part of its commitment to safe and responsible environmental, social and economic development.

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
1. INTRODUCTION	
The EIS must include a full description of the changes the project will cause to the environment that may result in adverse effects on areas of federal jurisdiction (i.e., section 5 of CEAA 2012) including changes that are directly linked or necessarily incidental to any federal decisions that would permit the project to be carried out.	Chapter 5, Sections 5.3, 5.5 Chapter 6, Sections 6.3, 6.5 Chapter 7, Sections 7.3, 7.5 Chapter 8, Sections 8.3, 8.5 Chapter 9, Sections 9.3, 9.5 Chapter 10, Sections 10.3, 10.5 Chapter 11, Sections 11.3, 11.5 Chapter 12, Sections 12.3, 12.5 Chapter 13, Sections 13.3, 13.5 Chapter 14, Sections 14.3, 14.5 Chapter 15, Sections 15.3, 15.5 Chapter 16, Sections 16.3, 16.5 Chapter 17, Sections 17.3, 17.5 Chapter 18, Sections 18.3, 18.5 Chapter 19, Sections 19.3, 19.5
The EIS must also include a list of the mitigation measures that the proponent proposes to undertake in order to avoid or minimize any adverse environmental effects of the project. It is the responsibility of the proponent to provide sufficient data and analysis on potential changes to the environment to ensure a thorough evaluation of the environmental effects of the project by the Agency or review panel.	Chapter 2, Section 2.7.3 Chapter 23, Section 24.3.1
2. GUIDING PRINCIPLES	
2.1. Environmental assessment as a planning and decision-making tool	
EA is a process to predict environmental effects of proposed projects before they are carried out. An EA: • identifies potential adverse environmental effects; • proposes measures to mitigate adverse environmental effects; • predicts whether there will be significant adverse environmental effects, after mitigation measures are implemented; and • includes a follow-up program to verify the accuracy of the EA and the effectiveness of the mitigation measures.	Chapter 4, Section 4.1
2.2. Public participation	
For EAs led by the Agency the public has an opportunity to comment on the draft EA report. For EAs by a review panel, CEAA 2012 requires that the review panel hold a public hearing. Additional opportunities for participation may also be provided. The proponent is required to provide current information about the project to the public and especially to the communities likely to be most affected by the project	Chapter 3, Section 3.2, 3.3, 3.4, 3.5 Chapter 4, Section 4.2.2

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EIS Guidelines	EIS Reference
2.3. Engagement with Indigenous groups	
The proponent is expected to engage with potentially affected Indigenous groups starting as early as possible in the project planning process in order to fulfil the statutory obligations of CEAA, 2012 to assess environmental effects of the proposed Project on Aboriginal peoples.	Chapter 3, Section 3.2, 3.4
The proponent is expected to work with potentially affected Indigenous groups to establish an engagement approach.	Chapter 3, Section 3.4
The proponent will make reasonable efforts to integrate Indigenous knowledge into the assessment of environmental effects.	Chapter 3, Section 3.4
2.4. Application of the precautionary approach	
The proponent will demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner in order to avoid significant adverse environmental effects	Chapter 4, Section 4.1
3. SCOPE OF THE ENVIRONMENTAL ASSESSMENT	
3.1. Designated project	
On April 5, 2019, Marathon Gold Corporation, the proponent of the Valentine Gold Project provided a project description to the Agency. Based on this project description, the Agency has determined that an EA is required under CEAA 2012 and will include the construction, operation, decommissioning and abandonment of the following project components: • Open pit mines • Ore, low grade ore, waste rock, overburden, top soil stockpile areas • Tailings management facility • Water management facilities • Ore treatment facility • Explosive storage and manufacturing • Effluent treatment • Potable water treatment • Site clearing, earthmoving, leveling, drilling and blasting activities • Transportation corridor construction or improvement (road) • Ore and concentrate transportation • Storage of petroleum products and reagents • Water supply (industrial and drinking) • Wastewater treatment • Power supply including a new high-voltage transmission line • Borrow areas • Accommodation camp • Administrative, workshop, warehouse, maintenance, storage, laboratory and security buildings	Chapter 2, throughout
3.2. Factors to be considered	
• environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other physical activities that have been or will be carried out;	Summary of the EIS Chapter 4, Section 4.2.2

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• the significance of the effects referred to above; • comments from the public; • mitigation measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project; • the requirements of the follow-up program in respect of the project; • the purpose of the project; • alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means; • any change to the project that may be caused by the environment; and • the results of any relevant regional study pursuant to CEAA 2012.	
3.2.1. Changes to the environment	
Under CEAA 2012, an examination of environmental effects that result from changes to the environment as a result of the project being carried out or as a result of the federal government exercising any power duty or function that would allow the project to be carried out must be considered in the EIS. In scoping the potential changes to the environment that may occur, the proponent should consider any potential changes in the physical environment such as changes to air quality, water quality and quantity, and physical disturbance of land that could reasonably be expected to occur.	Summary of the EIS Chapter 4, Section 4.1
3.2.2. Valued components to be examined	
The proponent must conduct and focus its analysis on VCs as they relate to section 5 of CEAA 2012, including the ones identified in Section 7.3 (Part 2) of these guidelines that may be affected by changes in the environment, as well as species at risk and their critical habitat as per the requirement outlined in section 79 of the Species at Risk Act.	Summary of the EIS Chapter 4, Section 4.2.3
The list of VCs presented in the EIS will be completed according to the evolution and design of the project and reflect the knowledge acquired through public consultation and engagement with Indigenous groups.	Chapter 3, Sections 3.2, 3.3, 3.5 Chapter 4, Section 4.2.3
The EIS will describe what methods were used to predict and assess the adverse environmental effects of the project on these VCs.	Chapter 4, Section 4.2.3
The VCs will be described in sufficient detail to allow the reviewer to understand their importance and to assess the potential for environmental effects arising from the project activities.	Chapter 4, Section 4.2.3
The EIS will provide a rationale for selecting specific VCs and for excluding any VCs or information specified in these guidelines. Challenges may arise regarding particular exclusions, so it is important to document the information and the criteria used to justify the exclusion of a particular VC or piece of information. Justification may be based on, for example, primary data collection, computer modelling, literature references, public participation or engagement with Indigenous groups, or expert input or professional judgement.	Chapter 4, Section 4.2.3

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EIS Guidelines	EIS Reference
The EIS will identify those VCs, processes, and interactions that either were identified to be of concern during any workshops or meetings held by the proponent or that the proponent considers likely to be affected by the project. In doing so, the EIS will indicate to whom these concerns are important (i.e. the public or Indigenous groups) and the reasons why, including environmental, cultural, historical, social, economic, recreational, and aesthetic considerations, and traditional knowledge. If comments are received on a component that has not been included as a VC, these comments will be summarized and the rationale for excluding the component will address the comments.	Chapter 4, Section 4.2.3
3.2.3. Spatial and temporal boundaries	
The spatial and temporal boundaries used in the EA may vary depending on the VC and will be considered separately for each VC, including for VCs related to the current use of lands and resources for traditional purposes by Aboriginal peoples, or other environmental effects referred to under paragraph 5(1)(c) of CEAA 2012. The proponent is encouraged to consult with the Agency, federal and provincial government departments and agencies, local government, and Indigenous groups, and take into account public comments when defining the spatial and temporal boundaries used in the EIS.	Chapter 4, Section 4.2.4
The EIS will describe the spatial boundaries, including local and regional study areas, of each VC to be used in assessing the potential adverse environmental effects of the project and provide a rationale for each boundary. Spatial boundaries will be defined taking into account the appropriate scale and spatial extent of potential environmental effects, community knowledge and Aboriginal traditional knowledge, current or traditional land and resource use by Indigenous groups, ecological, technical, social, and cultural considerations.	Chapter 4, Section 4.2.4.1
The temporal boundaries of the EA will span all phases of the project determined to be within the scope of this EA as specified under section 3.1 above. If effects are predicted after project decommissioning, this should be taken into consideration in defining boundaries. Community knowledge and Aboriginal traditional knowledge should factor into decisions around defining temporal boundaries.	Chapter 4, Section 4.2.4.2
If the temporal boundaries do not span all phases of the project, the EIS will identify the boundaries used and provide a rationale.	Chapter 2, Section 2.2.6 Chapter 4, Section 4.2.4.2
4. PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT	
4.1. Guidance	
The proponent should consult the Agency policy and guidance on topics to be addressed in the EIS, which is available on the Agency's website, and liaise with the Agency during the planning and development of the EIS. The proponent should also consult relevant guidance from other federal departments and ensure the most up to date version is being used.	Chapter 3, Section 3.3
The proponent is encouraged to engage with Indigenous groups on the planning and development of relevant sections of the EIS, including effects from changes to the environment and impacts to Indigenous interests as well as assessment of the environmental effects as outlined in paragraph 5(1)(c) of CEAA 2012.	Chapter 3, Section 3.4

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
In planning for a mine proposal and in developing the EIS and technical support documentation, the proponent is advised to consider the "Environmental Code of Practice for Metal Mines, published by Environment and Climate Change Canada. The recommended practices in the Code include the development and implementation of environmental management tools, the management of wastewater and mining wastes, and the prevention and control of environmental releases to air, water and land. In addition, the parameters and approach of the Environmental Effects Monitoring program under the Metal and Diamond Mining Effluent Regulations (MDMER) should be considered when developing a baseline monitoring program for the aquatic environment. For projects requiring the use of natural water bodies frequented by fish for the disposal of mine waste, including tailings and waste rock and for the management of process water, the MDMER would need to be amended to add the affected water bodies to Schedule 2 to designate them as tailings impoundment areas. This regulatory process will not be initiated until a detailed assessment of alternatives for mine waste disposal has been undertaken by the proponent. Conducting this robust and thorough assessment of alternatives during the EA will streamline the overall regulatory review process and minimize the time required to proceed with the MDMER amendment process. It also facilitates a thorough and transparent review of the assessment of alternatives as part of the EA process. For further guidance, the proponent should consult Environment and Climate Change Canada's Guidelines for the Assessment of Alternatives for Mine Waste Disposal. In the event that the proponent chooses not to conduct an assessment of alternatives for mine waste disposal during the EA stage pursuant to the MDMER requirements, the EA under CEAA 2012 will continue. In these circumstances, the proponent should discuss with Environment and Climate Change Canada how the information requirements and consultation associated with the MDMER amendment process can be addressed through other means. Submission of regulatory and technical information necessary for federal authorities to make their regulatory decisions during the conduct of the EA is at the discretion of the proponent. Although that information is not necessary for the EA decision, the proponent is encouraged to submit it concurrent with the EIS. While the EIS must outline applicable federal authorizations required for the project to proceed, the proponent must provide information relevant to the regulatory role of the federal government. It should be noted that the issuance of these other applicable federal legislative, regulatory, and constitutional requirements are within the purview of the relevant federal authorities and are subject to separate processes post EA decision.	Chapter 1, Section 1.4 Chapter 2, Sections 2.2, 2.3
4.2. Use of information	
4.2.1. Government expert advice	
The Agency will advise the proponent of the availability of pertinent information or knowledge or expert and specialist knowledge received from other federal authorities or other levels of government so that it can be incorporated into the EIS.	Noted
4.2.2. Community knowledge and Aboriginal traditional knowledge	
The proponent will incorporate into the EIS the community knowledge and Aboriginal traditional knowledge to which it has access or that is acquired through	Chapter 3, Section 3.4 Chapter 5, Section 5.1.2 Chapter 6, Section 6.1.2

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
public participation and engagement with Indigenous groups, in keeping with appropriate ethical standards and obligations of confidentiality. The proponent will engage in a respectful dialogue with Indigenous groups about the collection and use of Indigenous knowledge and enter into agreements, where necessary, regarding the use of information during and after the EA. Agreement should be obtained from Indigenous groups regarding the use, management, and protection of their existing traditional knowledge information during and after the EA. The proponent should collaborate with Indigenous groups to ensure, where possible, that the Indigenous knowledge is incorporated into the EIS in a way that is appropriate for the Indigenous group. The proponent will integrate Aboriginal traditional knowledge into all aspects of its assessment including both methodology (e.g. establishing spatial and temporal boundaries, defining significance criteria) and analysis (e.g. baseline characterization, effects prediction, development of mitigation measures). Should there be a lack of Indigenous knowledge, the proponent is still expected to seek information from other sources to complete the assessment of effects of changes to the environment on Indigenous peoples or the assessment of impacts to Indigenous interests.	Chapter 7, Section 7.1.2 Chapter 8, Section 8.1.2 Chapter 9, Section 9.1.2 Chapter 10, Section 10.1.2 Chapter 11, Section 11.1.2 Chapter 12, Section 12.1.2 Chapter 13, Section 13.1.2 Chapter 14, Section 14.1.2 Chapter 15, Section 15.1.2 Chapter 16, Section 16.1.2 Chapter 17, Section 17.1.2 Chapter 18, Section 18.1.2 Chapter 19, Section 19.1.2
4.2.3. Existing information	
In preparing the EIS, the proponent is encouraged to make use of existing information relevant to the project, if applicable. When relying on existing information to meet requirements of the EIS Guidelines, the proponent will either include the information directly in the EIS or clearly direct the reader to where it may obtain the information (i.e. through cross-referencing). When relying on existing information, the proponent will also comment on how the data were applied to the project, separate factual lines of evidence from inference, and state any limitations on the inferences or conclusions that can be drawn from the existing information.	Summary of the EIS Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2 Chapter 13, Section 13.2 Chapter 14, Section 14.2 Chapter 15, Section 15.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 Chapter 18, Section 18.2 Chapter 19, Section 19.2
4.2.4. Confidential information	
In implementing CEAA 2012, the Agency is committed to promoting public participation in the EA of projects and providing access to the information on which EAs are based. All documents prepared or submitted by the proponent or any other stakeholder in relation to the EA are included in the Canadian Environmental Assessment Registry and made available to the public on request. For this reason, the EIS will not contain information that: • is sensitive or confidential (i.e. financial, commercial, scientific, technical, personal, cultural or other nature), that is treated consistently as confidential, and the person affected has not consented to the disclosure; or	Marathon acknowledges that documents prepared of submitted by Marathon or other stakeholders may be available to the public.

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EIS Guidelines	EIS Reference
• may cause substantial harm to a person or specific harm to the environment through its disclosure.	
4.3. Study strategy and methodology	
It is possible these guidelines may include matters which, in the judgement of the proponent, are not relevant or significant to the project. If such matters are omitted from the EIS, the proponent will clearly indicate it in the EIS, and provide a justification so the Agency, federal authorities, Indigenous groups, the public and any other interested party have an opportunity to comment on this decision. Where the Agency or the review panel disagrees with the proponent's decision, it will require the proponent to provide the specified information.	The EIS addresses all items in the EIS Guidelines Summary of the EIS Chapter 4, Section 4.2.
The assessment will include the following general steps:	
✓ identifying the activities and components of the project;	Chapter 4, Section 4.2
✓ predicting potential changes to the environment;	Chapter 4, Section 4.2
✓ predicting and evaluating the likely effects on identified VCs;	Chapter 4, Section 4.2
✓ identifying technically and economically feasible mitigation measures for any significant adverse environmental effects;	Chapter 4, Section 4.2
✓ determining any residual environmental effects;	Chapter 4, Section 4.2
✓ considering cumulative effects of the project in combination with other physical activities that have been or will be carried out; and	Chapter 4, Section 4.2
✓ determining the potential significance of any residual environmental effect following the implementation of mitigation measures.	Chapter 4, Section 4.2
For each VC, the EIS will describe the methodology used to assess project-related effects. The EIS could include an analysis of the pathway of the effects of environmental changes on each VC. The EIS will document where and how scientific, engineering, community knowledge and Aboriginal traditional knowledge were used to reach conclusions. Assumptions will be clearly identified and justified. All data, models and studies will be documented such that the analyses are transparent and reproducible. All data collection methods will be specified. The uncertainty, reliability, sensitivity, and conservativeness of models used to reach conclusions must be indicated.	Chapter 4, Sections 4.3, 4.4 Chapter 5, Sections 5.1.2, 5.2 Chapter 6, Sections 6.1.2, 6.2 Chapter 7, Sections 7.1.2, 7.2 Chapter 8, Sections 8.1.2, 8.2 Chapter 9, Sections 9.1.2, 9.2 Chapter 10, Sections 10.1.2, 10.2 Chapter 11, Sections 11.1.2, 11.2 Chapter 12, Sections 12.1.2, 12.2 Chapter 13, Sections 13.1.2, 13.2 Chapter 14, Sections 14.1.2, 14.2 Chapter 15, Sections 15.1.2, 15.2 Chapter 16, Sections 16.1.2 16.2 Chapter 17, Sections 17.1.2, 17.2 Chapter 18, Sections 18.1.2, 18.2 Chapter 19, Sections 19.1.2, 19.2
The EIS will identify all significant gaps in knowledge and understanding related to key conclusions, and the steps to be taken by the proponent to address these gaps. Where the conclusions drawn from scientific, engineering and technical knowledge are inconsistent with the conclusions drawn from Aboriginal traditional knowledge, the EIS will present each perspective on the issue and a statement of the proponent's conclusions.	Chapter 23, throughout

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS will include a description of the environment (both biophysical and human), including the components of the existing environment and environmental processes, their interrelations as well as the variability in these components, processes, and interactions over time scales appropriate to the likely effects of the project. The description will be sufficiently detailed to characterize the environment before any disturbance to the environment due to the project and to identify, assess and determine the significance of the potential adverse environmental effects of the project. These data should include results from studies done prior to any physical disruption of the environment due to project related activities. The information describing the existing environment may be provided in a stand-alone chapter of the EIS or may be integrated into clearly defined sections within the effects assessment of each VC. This analysis will include environmental conditions resulting from historical and present activities in the local and regional study areas. If the baseline data have been extrapolated or otherwise manipulated to depict environmental conditions in the study areas, modelling methods and equations will be described and will include calculations of margins of error and other relevant statistical information, such as confidence intervals and possible sources of error. The proponent will provide the references used in creating their approach to baseline data gathering, including identifying where appropriate, the relevant federal or provincial standards. The proponent is encouraged to discuss the timeframe and considerations for its proposed baseline data with the Agency prior to submitting its EIS.	Chapter 4, Sections 4.2, 4.3 Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2 Chapter 13, Section 13.2 Chapter 14, Section 14.2 Chapter 15, Section 15.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 Chapter 18, Section 18.2 Chapter 19, Section 19.2 Baseline Study Appendix (BSA) 1 – BSA.10
In describing and assessing effects to the physical and biological environment, the proponent will take an ecosystem approach that considers both scientific and community knowledge and Indigenous knowledge and perspectives regarding ecosystem health and integrity. The proponent will consider the resilience of relevant species populations, communities, and their habitats.	Chapter 4, Section 4.3
The assessment of environmental effects on Indigenous peoples, pursuant to paragraph 5(1)(c) of CEAA 2012, will undergo the same rigour and type of assessment as any other VC (including setting of spatial and temporal boundaries, identification and analysis of effects, identification of mitigation measures, determination of residual effects, identification and a clear explanation of the methodology used for assessing the significance of residual effects and assessment of cumulative effects).The proponent will consider the use of both primary and secondary sources of information regarding baseline information, changes to the environment and the corresponding effect on health, socio-economics, physical and cultural heritage and the current use of lands and resources for traditional purposes.	Summary of the EIS Chapter 17, throughout
The proponent will provide Indigenous groups the opportunity to review and provide comments on the information used for describing and assessing effects on Indigenous peoples (further information on engaging with Indigenous groups is provided in Part 2, Section 5 of this document). The proponent will respond to the comments of Indigenous groups prior to submitting the EIS to ensure that the comments are adequately addressed. Where there are discrepancies in the views of the proponent and Indigenous groups on the information to be used in the EIS, the EIS will document these discrepancies and the rationale for the proponent's selection of information.	Summary of the EIS Chapter 3, Section 3.3 Chapter 17, throughout

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
The assessment of the effects of each of the project components and physical activities, in all phases, will be based on a comparison of the biophysical and human environments between the predicted future conditions with the project and the predicted future conditions without the project. In undertaking the environmental effects assessment, the proponent will use best available information and methods. All conclusions will be substantiated. Predictions will be based on clearly stated assumptions. The proponent will describe how each assumption has been tested. With respect to quantitative models and predictions, the EIS will document the assumptions that underlie the model, the quality of the data and the degree of certainty of the predictions obtained. Where there are discrepancies in the views of the proponent and Indigenous groups, with respect to the outcomes of assessment(s), the EIS will document and provide a rationale for these discrepancies.	Chapter 3, Section 3.3 Chapter 4, Section 4.1
4.4. Presentation and organization of the environmental impact statement	
To facilitate the identification of the documents submitted and their placement in the Canadian Environmental Assessment Registry, the title page of the EIS and its related documents will contain the following information: • project name and location; • title of the document, including the term “environmental impact statement”; • subtitle of the document; • name of the proponent; and • date of submission of the EIS.	Title page
The EIS will be written in clear, precise language. A glossary defining technical words, acronyms and abbreviations will be included. The EIS will include charts, diagrams, tables, maps, and photographs, where appropriate, to clarify the text. Perspective drawings that clearly convey the various components of the project will also be provided. Wherever possible, maps will be presented in common scales and datum to allow for comparison and overlay of mapped features.	A glossary has been provided. Tables of acronyms and abbreviations have been provided following the master table of contents. Charts, diagrams, tables, maps and photographs have been provided throughout the EIS chapters and in appendices as appropriate. Relevant maps are provided throughout the EIS chapters.
Detailed studies (including all relevant and supporting data and methodologies) will be provided in separate appendices and will be referenced by appendix, section, and page in the text of the main document.	Throughout EIS and Appendices
The EIS will explain how information is organized in the document. This will include a table of contents with a list of all tables, figures, and photographs referenced in the text.	Table of Contents
A complete list of supporting literature and references will also be provided.	Throughout EIS and Appendices
A table of concordance, which cross references the information presented in the EIS with the information requirements identified in the EIS Guidelines, will be provided.	Table of Concordance
4.5. Summary of the environmental impact statement	
The proponent will prepare a summary of the EIS in both of Canada’s official languages (French and English) to be provided to the Agency at the same time as the EIS that will include the following:	Summary of the EIS

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• a concise description of all key components of the project and related activities; • a summary of the engagement with Indigenous groups, and the participation of the public and government agencies, including a summary of the issues raised and the proponent's responses; • an overview of expected changes to the environment; • an overview of the key environmental effects of the project, as described under section 5 of CEAA 2012, and proposed technically and economically feasible mitigation measures; an overview of how factors under paragraph 19(1) of CEAA 2012 were considered; • the proponent's conclusions on the residual environmental effects of the project, and the significance of those effects, after taking into account the mitigation measures.	
The summary is to be provided as a separate document and should be structured as follows: 1. Introduction and EA context 2. Project overview 3. Alternative means of carrying out the project 4. Public participation 5. Engagement with Indigenous Groups 6. Summary of environmental effects assessment for each VC, including: a. description of the baseline; b. anticipated changes to the environment; c. anticipated effects; d. mitigation measures; e. significance of residual effects. 7. Follow-up and monitoring programs proposed The summary will have sufficient details for the reader to understand the project, any potential environmental effects, proposed mitigation measures, and the significance of the residual effects. The summary will include key maps illustrating the project location and key project components.	Summary of the EIS
Part 2 – Content of the Environmental Impact Statement	
1. INTRODUCTION AND OVERVIEW	
1.1. The proponent	
In the EIS, the proponent will: • provide contact information (e.g. name, address, phone, fax, email); • identify itself and the name of the legal entity(ies) that would develop, manage, and operate the project; • describe corporate and management structures; • specify the mechanism used to ensure that corporate policies will be implemented and respected for the project; and • identify key personnel, contractors, and/or sub-contractors responsible for preparing the EIS.	Chapter 1, Section 1.2
1.2. Project Overview	
The EIS will describe the project, key project components and associated activities, scheduling details, the timing of each phase of the project and other key features. If the project is part of a larger sequence of projects, the EIS will outline the larger context.	Chapter 1, Section 1.1

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
1.3. Project location	
The EIS will contain a description of the geographical setting in which the project will take place. This description will focus on those aspects of the project and its settings that are important in order to understand the potential environmental effects of the project. The following information will be included:	
• the Universal Transverse Mercator (UTM) projection coordinates of the main project site;	Chapter 1, Section 1.3.1
• current land and resource use in the area;	Chapter 1, Section 1.3.1
• distance of the project facilities and components to any federal lands;	Chapter 1, Section 1.3.1
• the environmental significance and value of the geographical setting in which the project will take place and the surrounding area;	Chapter 1, Section 1.3.1
• environmentally sensitive areas, such as national, provincial, and regional parks, ecological reserves, ecologically and biologically significant areas, fishery closure areas, vulnerable marine ecosystems, and habitats of federally or provincially listed species at risk and other sensitive areas;	Chapter 1, Section 1.3.1
• description of local communities; and	Chapter 1, Section 1.3.1
• traditional territories, Indian Reserve lands and Mi'kmaq harvesting regions and/or settlements.	Chapter 1, Section 1.3.1
1.4. Regulatory framework and the role of government	
The EIS will identify:	
• any federal power, duty or function that may be exercised that would permit the carrying out (in whole or in part) of the project or associated activities;	Chapter 1, Section 4.1
• legislation and other regulatory approvals that are applicable to the project at the federal, provincial, regional, and municipal levels;	Chapter 1, Section 4.1
• government policies, resource management plans, planning or study initiatives pertinent to the project and/or EA and their implications;	Chapter 1, Section 4.1
• any treaty, self-government, or other agreements between federal or provincial governments and Indigenous groups that are pertinent to the project and/or EA;	Chapter 1, Section 4.1
• any relevant land use plans, land zoning, or community plans; and	Chapter 1, Section 4.1
• regional, provincial, and/or national objectives, standards or guidelines that have been used by the proponent to assist in the evaluation of any predicted environmental effects.	Chapter 1, Section 4.1
2. PROJECT JUSTIFICATION AND ALTERNATIVES CONSIDERED	
2.1. Purpose of the project	
The EIS will describe the purpose of the project by providing the rationale for the project, explaining the background, the problems, or opportunities that the project is intended to satisfy and the stated objectives from the perspective of the proponent. If the objectives of the project are related to broader private or public sector policies, plans or programs, this information will also be included.	Chapter 2, Section 2.2.1

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS will also describe the predicted environmental, economic, and social benefits of the project. This information will be considered in assessing the justifiability of any significant adverse residual environmental effects as defined in section 5 of CEAA 2012, if such effects are identified.	Chapter 2, Section 2.9.4
2.2. Alternative means of carrying out the project	
The EIS will identify and consider the environmental effects of alternative means of carrying out the project that are technically and economically feasible.	Chapter 2, Sections 2.10, 2.11
The proponent will complete the assessment of alternative means in accordance with the Agency's Operational Policy Statement on this topic.	Chapter 2, Sections 2.10, 2.11
In its alternative means analysis, the proponent will address, at a minimum, the following project components:	Chapter 2, Sections 2.10, 2.11
• transportation of gold concentrate (means and routing considered);	Chapter 2, Sections 2.10, 2.11.1.8
• processing of ore material;	Chapter 2, Sections 2.10, 2.11.1.5
• access to the project site;	Chapter 2, Sections 2.10, 2.11.1.8
• location of key project components;	Chapter 2, Sections 2.10, 2.11
• energy sources to power the project site;	Chapter 2, Sections 2.10, 2.11.1.9
• routing of the high-voltage transmission line;	Chapter 2, Sections 2.10, 2.11.1.9
• management of water supply and wastewater;	Chapter 2, Sections 2.10, 2.11.1.7
• water management and location of the final effluent discharge points; and	Chapter 2, Sections 2.10, 2.11.1.7
• mine waste disposal and final effluent discharge (methods and sites considered).	Chapter 2, Sections 2.10, 2.11.1.6 and 2.11.1.7
The Agency recognizes that projects may be in the early planning stages when the EIS is being prepared. Where the proponent has not made final decisions concerning the placement of project infrastructure, the technologies to be used, or that several options may exist for various project components, the proponent shall conduct an environmental effects analysis at the same level of detail for each of the various options available (alternative means) within the EIS.	Chapter 2, Sections 2.10, 2.11
3. PROJECT DESCRIPTION	
3.1. Project components	
The EIS will describe the project, by presenting the project components, associated and ancillary works, and other characteristics that will assist in understanding the environmental effects. This will include:	
• maps, at an appropriate scale, of the project location; • project components; • boundaries of the proposed site with UTM coordinates; • the major existing infrastructure; • proponent lands properties or leases lands used for the project; • adjacent land uses; and • any important environmental features.	Chapter,2 Section 2.3
• information on the care and control of project components;	Chapter 1, Section 1.2.1

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• tailings management facility (footprint, location and preliminary designs, including the proposed infilling or dewatering of an unnamed navigable body of water located within the proposed footprint of the tailing management facility);	Chapter 2, Section 2.3.4
• waste rock, overburden, topsoil, low grade ore storage and stock piles (footprint, locations, volumes, development plans and design criteria);	Chapter 2, Section 2.3.2
• open pit mines (footprint, location, development plans including pit phases);	Chapter, Section 2.3.1
• crusher, and processing facilities (footprint, technology, location);	Chapter, Section 2.3.3
• water management facilities proposed to control, collect and discharge surface drainage and groundwater seepage to the receiving environment from all key components of the mine infrastructure (e.g. pit water, mine effluent);	Chapter, Sections 2.3.5, 2.3.6
• water treatment infrastructure;	Chapter, Section 2.3.5
• permanent and temporary linear infrastructures (road, pipelines, power supply), identifying the route of each of these linear infrastructures, the location and types of structure used for stream crossings;	Chapter, Section 2.3
• storage areas for fuels, explosives and hazardous wastes;	Chapter, Section 2.3
• drinking and industrial water requirements (source, quantity required, need for water treatment);	Chapter, Section 2.3.6
• energy supply including new high-voltage transmission line (source, quantity);	Chapter, Section 2.3.8
• waste disposal (types of waste, methods of disposal, quantity);	Chapter, Section 2.3
• accommodation camp; and	Chapter, Section 2.3.11
• administrative, workshop, warehouse, maintenance, storage, laboratory and security buildings. Project activities	Chapter, Section 2.3.9
3.2. Project activities	
The EIS will include descriptions of the construction, operation, decommissioning and abandonment associated with the proposed project.	Chapter 2, Sections 2.4, 2.5, 2.6
This will include descriptions of the activities to be carried out during each phase, the location of each activity, expected outputs and an indication of the activity's magnitude and scale.	Chapter 2, Sections 2.4, 2.5, 2.6
Although a complete list of project activities should be provided, the emphasis will be on activities with the greatest potential to have environmental effects. Sufficient information will be included to predict environmental effects and address concerns identified by the public and Indigenous groups. Highlight activities that involve periods of increased environmental disturbance or the release of materials into the environment.	Chapter 2, Sections 2.4, 2.5, 2.6
The EIS will include a summary of the changes that have been made to the project since originally proposed, including the benefits of these changes to the environment, Indigenous groups, and the public.	Chapter 2, Section 2.1

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS will include a schedule including time of year, frequency, and duration for all project activities. The information will include a description of:	Chapter 2, Section 2.2.6
3.2.1. Site preparation and construction	
• site clearing and excavation;	Chapter 2, Section 2.4.1
• blasting (frequency and methods);	Chapter 2, Section 2.4
• construction or upgrades of access roads;	Chapter 2, Section 2.4.2
• construction of a high-voltage transmission line;	Chapter 2, Section 2.4.8
• explosives manufacture and storage (location and management);	Chapter 2, Section 2.4
• borrow materials requirement (source and quantity);	Chapter 2, Section 2.4
• water management, including water diversions, dewatering or deposition activities required (location, methods, timing); construction of infrastructure associated with power generation and communications;	Chapter 2, Section 2.4.2
• equipment requirements (type, quantity);	Chapter 2, Section 2.4
• administrative buildings, garages, other ancillary facilities;	Chapter 2, Section 2.4.2
• accommodation camp (location, capacity, wastewater treatment);	Chapter 2, Section 2.4.2
• number of employees and transportation of employees; and	Chapter 2, Section 2.4.5
• storage and management of hazardous materials, fuels, and residues.	Chapter 2, Section 2.4
3.2.2. Operation	
• mining plan, ore production, ore stockpiling, concentrate production;	Chapter 2, Section 2.5
• storage, handling and transport of materials;	Chapter 2, Section 2.5
• explosives manufacture, storage and use (storage location and management);	Chapter 2, Section 2.5
• drilling and blasting (frequency and methods);	Chapter 2, Section 2.5.1.4
• water management on the project site including mine water, storm water, process water, wastewater, water recycling, effluent treatment and potable water treatment (quantity, treatment requirements, release point(s));	Chapter 2, Section 2.5
• ore extraction, ore crushing and treatment;	Chapter 2, Section 2.5
• storage and handling of reagents, petroleum products, chemical products, hazardous materials and residual materials;	Chapter 2, Section 2.5
• characterization and management of ore, waste rock, low grade ore, overburden and tailings (storage, handling and transport of the volumes generated, mineralogical characterization, potential for metal leaching and acid rock drainage);	Chapter 2, Section 2.5
• waste management and recycling (other than mine waste such as tailings and waste rock); and	Chapter 2, Section 2.5
• characterization and management of workforce, including transportation, work schedules and lodging.	Chapter 2, Section 2.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
3.2.3. Decommissioning and abandonment	
• the preliminary outline of a decommissioning and reclamation plan for any components associated with the project;	Chapter, Section 2.6
• the ownership, transfer and control of the different project components;	Chapter, Section 2.6
• the responsibility for monitoring and maintaining the integrity of the remaining structures; and	Chapter, Section 2.6
• for permanent facilities, a conceptual discussion on how decommissioning and abandonment could occur.	Chapter, Section 2.6
4. PUBLIC PARTICIPATION AND CONCERNS	
The EIS will describe the ongoing and proposed public participation activities that the proponent will undertake or that it has already conducted on the project. It will provide a description of efforts made to distribute project information and provide a description of information and materials that were distributed during the consultation process.	Chapter 3, throughout
The EIS will indicate the methods used, where the consultation was held, the persons and organizations consulted, the concerns voiced and the extent to which this information was incorporated in the design of the project as well as in the EIS.	Chapter 3, throughout
The EIS will provide a summary of key issues raised related to the project and its potential effects to the environment as well as describe any outstanding issues and ways to address them.	Chapter 3, Sections 3.3, 3.4
5. ENGAGEMENT WITH INDIGENOUS GROUPS AND CONCERNS RAISED	
For the purposes of developing the EIS, the proponent will engage with Indigenous groups that may be affected by the project, to obtain their views on:	
• the project;	Chapter 3, Section 3.4
• effects of changes to the environment on Indigenous peoples (health and socio-economic conditions; physical and cultural heritage, including any structure, site or thing that is of historical, archaeological, paleontological, or architectural significance; and current use of lands and resources for traditional purposes) pursuant to paragraph 5(1)(c) of CEAA 2012; and	Chapter 3, Section 3.4
In order to allow the Indigenous groups to engage and provide views on the above, the proponent will provide the Indigenous groups with the following timely and relevant opportunities to:	
• learn about the project including providing information about the proposed project (including but not limited to project design, location, potential effects, mitigation measures and follow-up and monitoring programs); and	Chapter 3, Section 3.4
• provide input on the overall project; effects of changes to the environment on Indigenous peoples pursuant to paragraph 5 (1)(c) of CEAA, 2012 and potential adverse impacts of the project on Indigenous interests.	Chapter 3, Section 3.4
The proponent will structure its engagement activities to provide adequate time for groups to review and comment on the relevant information. Engagement activities are to be appropriate to the groups' needs, arranged through	Chapter 3, throughout

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
discussions with the groups and in keeping with established consultation protocols, where available. The EIS will describe all efforts, successful or not, taken to solicit the information required from groups to support the preparation of the EIS.	
With respect to engagement activities, the EIS will document:	
• the engagement activities undertaken with each group prior to the submission of the EIS, including the date and means of engagement (e.g. meeting, mail, telephone);	Chapter 3, Sections 3.3, 3.4, 3.5
• the main issues and comments raised during the engagement activities by each group and the proponent's responses (effort should be made to collating like issues together along VCs identified in the EIS);	Chapter 3, Sections 3.3, 3.4, 3.5
• any future planned engagement activities;	Chapter 3, Sections 3.3, 3.4, 3.5
• where and how Indigenous groups' perspectives were integrated into and/or contributed to decisions regarding the project, design, construction, operation, decommissioning, abandonment, maintenance, follow-up and monitoring and associated potential effects (paragraph 5(1)(c)) and the associated mitigation utilized to manage those effects. The effects and mitigation measures should be clearly linked to VCs in the EIS as well as to specific project components or activities; and	Chapter 3, Section 3.4
• how engagement activities by the proponent allowed groups to understand the project and evaluate its impacts on their communities, activities, and interests. Where impacts are identified, provide a discussion of how those would be managed or mitigated (and provide this information for each Indigenous group separately).	Chapter 3, Section 3.3
To assist with the provision of records as requested above, the Agency recommends the proponent create a tracking table of key issues raised by each Indigenous group and responses provided by the Proponent.	Chapter 3, Section 3.4
For the groups expected to be most affected by the project, the proponent is expected to strive towards developing a productive and constructive relationship based on on-going dialogue with the groups in order to support information gathering and the effects assessment. These groups include: • Qalipu First Nation • Miawpukek First Nation	Chapter 3, Section 3.4
For the above groups, the proponent will strive to use primary data sources and hold face-to-face meetings to discuss concerns. The proponent will facilitate these meetings by making key EA summary documents (baseline studies, EIS, key findings, plain language summaries) accessible in advance. The proponent will ensure there are sufficient opportunities for individuals and groups to provide oral input in the language of their choice. If possible, the proponent should consider translating information for these groups into the appropriate Indigenous languages(s) in order to facilitate engagement activities during the EA. For any impacts identified during these engagement activities, the proponent will discuss approaches to manage or mitigate those impacts and make efforts to discuss the degree of those impacts after mitigation (residual effects) with Indigenous groups prior to submitting the EIS to the Agency.	Chapter 3, Section 3.4
For groups that may also be affected by the project, but to a lesser degree, the proponent will, at a minimum, ensure these groups are notified about key steps in	Chapter 3, Section 3.4

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
the EIS development process and of opportunities to provide comments on key EA documents and/or information to be provided regarding their community. The proponent will still ensure these groups are reflected in the baseline information and assessment of potential effects or impacts in the EIS.	
The groups referenced above may change as more is understood about the environmental effects of the project and/or if the project or its components change during the EA. The Agency reserves the right to alter the list of groups that the proponent will engage as additional information is gathered during the EA.	Noted
6. IMPACTS TO INDIGENOUS INTERESTS	
With respect to potential adverse impacts of the project on Indigenous interests, for each group identified in Part 2, Section 5 of these guidelines (or in subsequent correspondence from the Agency), the EIS will document:	
the Indigenous group's perspectives on the importance of the land on which the Project is located and how it intersects with any land management uses and/or plans they may have;	Chapter 17, Section 17.2
maps and data sets (e.g., fish catch numbers);	Chapter 17, Section 17.2
• potential adverse impacts of each of the project components and physical activities, in all phases, on Indigenous interests, including those raised by Indigenous groups.	Chapter 17, Sections 17.3, 17.5
• potential adverse impacts on Indigenous interests that have not been fully mitigated as part of the EA and associated engagement with Indigenous groups. Include perspective of potentially impacted Indigenous groups; and	Chapter 3, Section 3.4 Chapter 17, Sections 17.5, 17.9
• potential adverse impacts that may result from the residual and cumulative environmental effects. Include the perspectives of potentially impacted Indigenous groups.	Chapter 3, Section 3.4 Chapter 17, Section 17.5 Chapter 20, Section 20.14
This information and assessment will be informed from engagement with Indigenous groups described in Part 2, Section 5 of these guidelines. The information sources, methodology and findings of the assessment of paragraph 5(1)(c) effects under CEAA 2012 may be used to inform the assessment of potential adverse impacts of the project on Indigenous interests. However, there may be distinctions between the adverse impacts on potential or established Aboriginal or Treaty rights and paragraph 5(1)(c) effects under CEAA 2012. The proponent will carefully consider the potential distinction between these two aspects and, where there are differences; will include the relevant information in its assessment.	Chapter 17, Section 17.1.1
7. EFFECTS ASSESSMENT	
7.1. Project setting and baseline conditions	
Based on the scope of the project described in Section 3 (Part 1), the EIS will present baseline information in sufficient detail to enable the identification of how the project could affect the VCs and an analysis of those effects. Should other VCs be identified during the conduct of the EA, the baseline condition for these components will also be described in the EIS. As a minimum, the EIS will include a description of the following environmental components.	Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 11, Section 11.2 Chapter 12, Section 12.2 Chapter 13, Section 13.2 Chapter 14, Section 14.2 Chapter 15, Section 15.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 Chapter 18, Section 18.2 Chapter 19, Section 19.2
7.1.1. Atmospheric environment	
• a baseline survey of ambient air quality in the project areas and in the airshed likely to be affected by the project, for the mine site, by identifying and quantifying emission sources for, but not limited to, the following contaminants: total suspended particulates, fine particulates smaller than 2.5 microns ($PM_{2.5}$), respirable particulates of less than 10 microns (PM_{10}), carbon monoxide (CO), sulphur oxides (SOx), nitrogen oxides (NOx), and volatile organic compounds (VOCs);	Chapter 5, Section 5.2 BSA.6
• identify and quantify existing greenhouse gas emissions by individual pollutant measured as kilotonnes of CO_2 equivalent per year in the project study areas;	Chapter 5, Section 5.2.2.3 BSA.6
• direct and indirect sources of air emissions;	Chapter 5, Section 5.2 BSA.6
• current provincial/territorial/federal limits for greenhouse gas emission targets;	Chapter 5, Section 5.1.1.2
• current ambient noise levels at key receptor points (e.g. Indigenous groups or communities), including the results of a baseline ambient noise survey. Information on typical sound sources, geographic extent and temporal variations will be included;	Chapter 5, Sections 5.2.1.4, 5.2.2.4
• existing ambient night-time light levels in the project area and at any other areas where project activities could have an effect on light levels. The EIS will describe night-time illumination levels during different weather conditions and seasons; and	Chapter 5, Sections 5.2.1.5, 5.2.2.5
• historical records of relevant meteorological information (e.g. total precipitation (rain and snow); mean, maximum and minimum temperatures; and typical wind speed and direction).	Chapter 5, Section 5.2.2.1
1.1.2. Geology and geochemistry	
• the bedrock and host rock geology of the deposit, including a table of geologic descriptions, geological maps and cross-sections of appropriate scale;	Chapter 6, Appendix 6A Chapter 9, Section 9.2.1.5, Section 9.2.2.5 BSA.3, Attachment 3-D BSA.7, Attachment 7-D – Section 6.1.1

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• the geomorphology, topography and geotechnical characteristics of areas proposed for construction of major project components;	Chapter 9, Section s9.2.1.5, 9.2.2.5 BSA.3, Attachment 3-D BSA.7, Attachment 7-D
• the geochemical characterization of expected mine material such as waste rock, ore, low grade ore, tailings, overburden and potential construction material in order to predict metal leaching and acid rock drainage including oxidation of primary sulphides and secondary soluble sulphate minerals;	BSA.5, Attachment 5-A, Attachment 5-B
• geological hazards that exist in the areas planned for the project facilities and infrastructure, including: ✓ history of seismic activity in the area; ✓ isostatic rise or subsidence; ✓ landslides, slope erosion and the potential for ground and rock instability, and subsidence during and following project activities.	Chapter 9, Sections 9.2.2.6, 9.5.4 Chapter 22, Section 22.3.2
• baseline concentrations of contaminants of concern within the local, regional and downstream receiving environments; and	Chapter 6, Section 6.2.2.3 Chapter 7, Section 7.2.2.4 Chapter 9, Section 9.2.2.7 BSA.3, Attachment 3-D
• geochemical characterization of leaching potential, including, but not limited to, contaminants of concern from waste rock, pit walls and tailings.	BSA.5, Attachment 5-A, Attachment 5-B
1.1.3. Topography and soil	
• baseline mapping and description of landforms and soils within the local and regional project areas;	Chapter 9, Sections 9.2.2.5, 9.2.2.7 BSA.3, Attachment 3-F BSA.7, Attachment 7-D
• maps depicting soil depth by horizon and soil order within the mine site area to support soil salvage and reclamation efforts, and to outline potential for soil erosion;	Chapter 9, Sections 9.2.1.5, 9.2.2.5, 9.2.2.7 BSA.3, Attachment 3-F BSA.7, Attachment 7-D
• suitability of topsoil and overburden for use in the rehabilitation of disturbed areas.	Chapter 9, Section 9.2.2.7 BSA.7, Attachment 7-D
1.1.4. Riparian, wetland and terrestrial environments	
• characterization of soils in the excavation area, in terrestrial and riparian environments, with a description of their past use;	Chapter 9, Section 9.2.2.7 BSA.7, Attachment 7-D
• topography, drainage, geology and hydrogeology, and the physicochemical characteristics of potential on-land sediment or soil disposal sites;	Chapter 6, Sections 6.2.2.1, 6.2.2.4, 6.2.2.5 Chapter 9, Sections 9.2.2.5, 9.2.2.7 BSA.3

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• characterization of the shoreline, banks, current and future flood risk areas, and wetlands (fens, marshes, peatlands, mudflats and eelgrass beds, etc.), including the location and extent of wetlands likely to be affected by project activities according to their size, type (class and form), the description of their ecological function (ecological, hydrological, wildlife, socioeconomic, etc.) and species composition; and	Chapter 9, Section 9.2.2.1
• plant and animal species (abundance, distribution and diversity) and their habitats, with a focus on species at risk or with special status that are of social, economic, cultural or scientific significance, as well as invasive alien species.	Chapter 9, Sections 9.2.2.1, 9.2.2.2, 9.2.2.3, 9.2.2.4 BSA.7, Attachments 7-D, 7-F, 7-I
1.1.5. Groundwater and surface water	
• hydrogeology, including: ✓ hydrogeological context (e.g. hydrostratigraphy with aquifers and aquitards, major faults, etc.), including the delineation of key stratigraphic and hydrogeologic boundaries; ✓ physical properties of the hydrogeological units (e.g. hydraulic conductivity, transmissivity, saturated thickness, storativity, porosity, specific yield); ✓ groundwater flow patterns and rates; ✓ a discussion of the hydrogeologic, hydrologic, geomorphic, climatic and anthropogenic controls on groundwater flow; ✓ temporal changes in groundwater flow (e.g. seasonal and long term changes in water levels); ✓ a delineation and characterization of groundwater - surface water interactions including temperature and the locations of groundwater discharge to surface water and surface water recharge to groundwater; ✓ temperature changes in surface water as a result of groundwater-surface water interactions; ✓ changes to surface water quality, including seasonal changes in runoff entering watercourses.	Chapter 6, Section 6.2.2 Chapter 7, Section 7.2.2 BSA.3
• hydrogeological maps and cross-sections for the mine area to outline the extent of aquifers and aquitards, including bedrock fracture and fault zones, locations and depths of wells and strainers, groundwater types springs, surface waters, and project facilities. Groundwater levels, potentiometric contours, flow directions, groundwater divides and areas of recharge and discharge should be included;	Chapter 6, Section 6.2.2.1, 6.2.2.5 BSA.3, Attachment 3-D
• all groundwater monitoring wells, including their location, in respect to the project area, including geologic, hydrostratigraphic, piezometric and construction data (e.g. depths of surficial rock and bedrock, bedrock quality, fracture zones, piezometric levels, hydraulic conductivity, diameter and screen depth and intercepted aquifer unit);	Chapter 6, Sections 6.2.2.2, 6.2.2.3, 6.2.2.4, 6.2.2.5 BSA.3, Attachments 3-A, 3-B, 3-D
• monitoring protocol for collection of existing groundwater and surface water data;	Chapter 6, Sections 6.2.1, 6.9 Chapter 7, Sections 7.2.1, 7.9 BSA.3, All Attachments
• an appropriate hydrogeologic model for the project area, which discusses the hydrostratigraphy and groundwater flow systems; a sensitivity analysis will be performed to test model sensitivity to climatic	Chapter 6, Sections 6.2.2, 6.3.5, Appendix 6A

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
variations (e.g. recharge) and hydrogeologic parameters (e.g. hydraulic conductivity);	BSA.3, Attachment 3-D
• groundwater quality, including lab analytical results for metals, major ions and physical parameters, including temperature, with the interpretation of results for any anomalous values and for contaminants of concern;	Chapter 6, Section 6.2.2.3 BSA.3, Attachments 3-A, 3-D
• graphs or tables indicating the seasonal variations in groundwater levels, flow regime, and quality;	Chapter 6, Sections 6.2.2.2, 6.2.2.3, 6.2.2.4, 6.2.2.5 BSA.3
• local and regional potable groundwater supplies, including their current use and potential for future use;	Chapter 6, Section 6.2.2.6
• bedrock fracture sizes and orientations in relation to groundwater flow;	Chapter 6, Sections 6.2.2.1, 6.2.2.4 BSA.3, Attachment 3-D
• the delineation of drainage basins, at appropriate scales (water bodies and watercourses), including intermittent streams, flood risk areas and wetlands, boundaries of the watershed and subwatersheds, overlaid by key project components;	Chapter 7, Sections 7.2.2.2, 7.2.2.3 BSA.3
• hydrological regimes, including monthly, seasonal and annual water flow (discharge) data;	Chapter 7, Sections 7.2.2.2, 7.2.2.3 BSA.3
• for each affected water body, the total surface area, bathymetry, maximum and mean depths, water level fluctuations, type of substrate (sediments);	Chapter 7, Sections 7.2.2.2, 7.2.2.3 Chapter 8, Section 8.2.2.1 BSA.3, Attachments 3-C, 3-D BSA.4, Attachment 4-C
• seasonal surface water quality, including analytical results (e.g. water temperature, turbidity, pH, dissolved oxygen profiles) and interpretation for representative tributaries and water bodies including all sites to receive mine effluents or runoff;	Chapter 7, Section 7.2.2.4 BSA.3, Attachment 3-C
• any local and regional potable surface water resource;	Chapter 6, Section 6.2.2 Chapter 7, Section 7.2.2
• sediment quality analysis for key sites likely to receive mine effluents.	Chapter 8, Section 8.2.2.1 BSA.4, Attachment 4-C
7.1.6. Fish and fish habitat	
For potentially affected surface waters:	
• a characterization of fish populations on the basis of species and life stage, including information on the surveys carried out and the source of data available (e.g. location of sampling stations, catch methods, date of catches, species, catch-per-unit effort);	Chapter 8, Sections 8.2.1, 8.2.2 BSA.4, Attachment 4-A, 4-B, 4-C, 4-D
• a description of primary and secondary productivity in affected water bodies with a characterization of season variability;	Chapter 8, Sections 8.2.1.4, 8.2.1.5, 8.2.2.2, 8.2.2.3 BSA.4, Attachment 4-C

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• a list of any fish or invertebrate species at risk that are known to be present;	Chapter 8, Section 8.2.2.5 BSA.8
• a description of the habitat by homogeneous section, including the length of the section, width of the channel from the high-water mark (bankful width), water depths, type of substrate (sediments), aquatic and riparian vegetation, and photos;	Chapter 8, Section 8.2.2.1 BSA.4, Attachments 4-A, 4-B, 4-C
• description of natural obstacles (e.g. falls, beaver dams) or existing structures (e.g. water crossings) that hinder the free passage of fish;	Chapter 8, Sections 8.2.2.1, 8.2.2.4
• maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, migration routes, etc. Where appropriate, this information should be linked to water depths (bathymetry) to identify the extent of a water body's littoral zone; and	Chapter 8, Section 8.2.2.1 BSA.4, Attachment 4-A, 4-B
• the description and location of suitable habitats for fish species at risk that appear on federal and provincial lists and that are found or are likely to be found in the study area.	Chapter 8, Section 8.2.2.4, 8.2.2.5
Note that certain intermittent streams or wetlands may constitute fish habitat or contribute indirectly to fish habitat. The absence of fish at the time of the survey does not irrefutably indicate an absence of fish habitat.	Noted
7.1.7. Migratory birds and their habitat	
• birds and their habitats that are found or are likely to be found in the study area. This description may be based on existing sources, but supporting evidence is required to demonstrate that the data used are representative of the avifauna and habitats found in the study area. The existing data must be supplemented by surveys, if required;	Chapter 10, Sections 10.2.1, 10.2.2, 10.2.3, 10.2.4 BSA.7, Attachment 7-A, 7-B, 7-C, 7-D, 7-E, 7-H
• abundance, distribution, and life stages of migratory and non-migratory birds (including waterfowl, raptors, shorebirds, marsh birds and other land birds) likely to be affected in the project area based on existing information, or surveys, as appropriate, to provide current field data;	Chapter 10, Sections 10.2.2, 10.2.3, 10.2.4 BSA.7, Attachment 7-A, 7-B, 7-C, 7-D, 7-E, 7-H
• characterization of various ecosystems found in the project area, likely to be affected, based on existing information (land cover types, vegetation); and	Chapter 10, Section 10.2.4 BSA.7, Attachment 7-D
• year-round migratory bird use of the area (e.g. winter, spring migration, breeding season, fall migration), based on preliminary data from existing sources and surveys to provide current field data if appropriate.	Chapter 10, Section 10.2.2, 10.2.3, 10.2.4 BSA.7, Attachment 7-A, 7-B, 7-C, 7-D, 7-E, 7-H
7.1.8 Species at Risk	
• a list of all species at risk listed under the Species at Risk Act (fauna and flora) that may be affected by the project, including Newfoundland marten, using existing data and literature as well as surveys to provide current field data;	Chapter 8, Section 8.2.2.5 Chapter 9, Section 9.2.2.2 Chapter 10, Sections 10.2.3.4, 10.2.3.5 Chapter 11, Throughout Chapter 12, Section 12.2.2.3 BSA.8

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• a list of all species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as extirpated, endangered, threatened and of special concern, including caribou;	BSA.8
• any published studies that describe the regional importance, abundance and distribution of species at risk including recovery strategies or plans. The existing data must be supplemented by surveys, as required; and	Chapter 8, Section 8.2.2.5 Chapter 9, Section 9.2.2.2 Chapter 10, Sections 10.2.3.4, 10.2.3.5 Chapter 11, Throughout Chapter 12, Section 12.2.2.3 BSA.8
• information on residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable) and general life history of species at risk that may occur in the project area, or be affected by the project.	Chapter 8, Section 8.2.2.5 Chapter 9, Section 9.2.2.2 Chapter 10, Sections 10.2.3.4, 10.2.3.5, 10.2.4.5 Chapter 11, Throughout Chapter 12, Section 12.2.2.3 BSA.8
7.1.9. Indigenous peoples	
The proponent shall gather and document baseline information in the EIS for each Indigenous group identified in Part 2, Section 5 of these guidelines (and any groups identified after these guidelines are finalized). The baseline information will:	
• Describe and characterize the elements in paragraph 5(1)(c) of CEAA 2012 based on the spatial and temporal scope selected for the EA according to the factors outlined in Part 1, Section 3.2.3 of this document.	Chapter 17, Section 17.1.3
• Characterize the regional context of each of the elements of paragraph 5(1)(c) of CEAA 2012 to support the assessment of project related effects, including consideration of the differences of experiences by sub-populations within an Indigenous group, as appropriate (for example, women, youth, elders, families) and cumulative effects.	Chapter 17, Section 17.2 Chapter 20, Section 20.14
• Be sufficient to provide a comprehensive understanding of the current state of each VC related to effects of changes to the environment on Aboriginal peoples. Each of the VCs for effects of changes to the environment on Aboriginal peoples is interrelated and therefore baseline information will often overlap.	Chapter 16, Section 16.2 Chapter 17, Section 17.2
The proponent should engage with Indigenous groups to understand where baseline information and the respective assessment fit appropriately. Note: VCs identified for biophysical assessment (such as fish and fish habitat) may contribute to assessment and conclusion of VCs related to effects of changes to the environment on Indigenous peoples.	Chapter 3, Section 3.4 Chapter 17, Sections 17.2, 17.3.3, 17.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
Health and Socio-Economic Conditions	
Baseline information is required for health and socio-economic conditions. For health this includes the state of physical, mental and social well-being. For socio-economic conditions, as well as the economic and social activities of an individual Indigenous group, the baseline will include contextual information regarding their practices. Specific aspects that will be considered include:	
• general information about Indigenous populations and sub-populations;	Chapter 17, Section 17.2
• sites or areas that are used by Indigenous people either for permanent residences or on a seasonal/temporary basis and the number of people that use each site or area identified;	Chapter 14, Sections 14.2.2.1, 14.2.2.2 Chapter 17, Section 17.2
• drinking water sources (permanent, seasonal, periodic, or temporary);	Chapter 16, Section 16.2.2.1
• consumption of country foods (also known as traditional foods) including food that is trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes, outside of the commercial food chain;	Chapter 16, Section 16.2.2.2 Chapter 17, Section 17.2
• which country foods are consumed by which groups, how frequently, and where these country foods are harvested;	Chapter 16, Section 16.2.2.2 Chapter 17, Section 17.2
• commercial activities (e.g. fishing, trapping, hunting, forestry, outfitting); and	Chapter 16, Section 16.2.2 Chapter 17, Sections 17.2.2, 17.2.3.1, 17.2.4.1
• recreational uses.	Chapter 16, Section 16.2 Chapter 17, Section 17.2
Physical and Cultural Heritage	
Baseline information for physical and cultural heritage (including any site, structure or thing of archaeological, paleontological, historical or architectural significance) will consider all elements of cultural and historical importance to Indigenous groups in the area and is not restricted to artifacts considered under provincial heritage legislative requirements. Specific aspects that will be considered include, but are not limited to:	
• burial sites;	Chapter 18, Section 18.2
• cultural landscapes;	Chapter 18, Section 18.2
• sacred, ceremonial or culturally important places, objects or things; and	Chapter 18, Section 18.2
• archaeological potential and/or artefact places.	Chapter 18, Section 18.2
Current Use of Lands and Resources for Traditional Purposes	
Baseline information for current use of lands and resources for traditional purposes will focus on the traditional activity (e.g. hunting, fishing) and include a characterization of all attributes of the activity that can be affected by environmental change. This includes an understanding of the baseline conditions of the quality and quantity of resources (e.g. preferred species and perception of quality, cultural connections to species), access to resources (e.g. physical access, timing, seasonality, distance from community), and overall quality of the experience of the practice (e.g. noise, air quality, visual landscape, and presence of others). Specific aspects that will be considered include, but are not limited to:	

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• location of traditional territory (including maps where available);	Chapter 17, Sections 17.1.3, 17.2.2, 17.2.3, 17.2.4
• location of reserves and communities;	Chapter 17, Sections 17.1.3, 17.2.2, 17.2.3, 17.2.4
• traditional uses currently practiced or practiced in living memory, including practices that an Indigenous group wants to engage in the future or recently did but cannot given the particular context;	Chapter 17, Sections 17.2.2, 17.2.3.3, 17.2.4.3
• location of traditional uses including, hunting, trapping, and fishing camps, cabins and traditional gathering or teaching grounds;	Chapter 17, Sections 17.2.2, 17.2.3.3, 17.2.4.3
• fish, wildlife, birds, plants, or other natural resources and their habitats of importance for traditional use;	Chapter 17, Sections 17.2.2, 17.2.3, 17.2.4 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2
• places where fish, wildlife, birds, plants or other natural resources are harvested, including places that are preferred;	Chapter 17, Sections 17.2.2, 17.2.3.3, 17.2.4.3
• access and travel routes for conducting traditional practices;	Chapter 17, Sections 17.2.3.3, 17.2.4.3
• frequency, duration or timing of traditional practices;	Chapter 17, Section 17.2
• cultural values associated with the area affected by the project and the traditional uses identified;	Chapter 17, Section 17.2.2, 17.2.3.3, 17.2.4.3
• other current uses identified by Indigenous groups.	Chapter 17, Sections 17.2.3.3, 17.2.4.3
Any other baseline information that supports the analysis of predicted effects on Indigenous peoples will be included as necessary. The EIS will also indicate how input, including Indigenous knowledge, from groups was used in establishing the baseline conditions related to health and socio- economics, physical and cultural heritage and current use of lands and resources for traditional purposes.	Chapter 17, Section 17.2
Should there be a lack of Indigenous knowledge; the proponent is still expected to seek information from other sources sufficient enough to allow for a complete the assessment of effects to be presented in the EIS.	Chapter 17, Section 17.2
7.1.10. Other changes to the environment arising as a result of a federal decision or due to changes on federal lands, in another province or outside Canada	
Should there be the potential for a change to the environment arising as a result of a federal decision(s), or on federal lands, lands in another province or lands outside Canada, the EIS will include baseline information on the environmental component likely to be affected (if this information is not already covered in other subsections of these guidelines).	N/A

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
7.1.11. Human environment	
• the rural and urban settings likely to be affected by the project;	Chapter 16, Section 16.1.3
• any federal lands, lands located outside the province or Canada that may be affected by the project;	Chapter 1, Section 1.3.1 Chapter 23, Section 23.2.1
• the current use of land in the study area, including a description of hunting, recreational and commercial fishing, trapping, gathering, outdoor recreation, use of seasonal cabins, outfitters;	Chapter 16, Section 16.2.2.2 Chapter 17, Sections 17.2.3.3, 17.2.4.3
• current use of all waterways and water bodies that will be directly affected by the project, including recreational uses, where available;	Chapter 16, Section 16.2.2 Chapter 17, Sections 17.2.3.3, 17.2.4.3
• location of and proximity of any permanent, seasonal or temporary residences or camps;	Chapter 16, Section 16.2.2 Chapter 17, Sections 17.2.2, 17.2.3, 17.2.4
• health and socio-economic conditions, including the functioning and health of the socio-economic environment, encompassing a broad range of matters that affect communities in the study area in a way that recognizes interrelationships, system functions and vulnerabilities; and	Chapter 14, Section 14.2.2 Chapter 17, Sections 17.2.3.1, 17.2.4.1
• physical and cultural heritage, including structures, sites, or things of historical, archaeological, paleontological, or architectural significance.	Chapter 17, Sections 17.2.3.2, 17.2.4.2 Chapter 18, Section 18.2.2
7.2. Predicted changes to the physical environment	
The EA will include a consideration of the predicted changes to the environment as a result of the project being carried out or as a result of any powers, duties or functions that are to be exercised by the federal government in relation to the project. These predicted changes to the environment are to be considered in relation to each phase of the project (e.g. construction, operation, decommissioning, and abandonment) and are to be described in terms of the magnitude, geographic extent, duration, and frequency, and whether the environmental changes are reversible or irreversible. As changes to various parts of the physical environment may be inter-related as part of an ecosystem, the EIS will explain and describe the connections between the changes described.	Chapter 5, Sections 5.3, 5.5 Chapter 6, Sections 6.3, 6.5 Chapter 7, Sections 7.3, 7.5 Chapter 8, Sections 8.3, 8.5 Chapter 9, Sections 9.3, 9.5 Chapter 10, Sections 10.3, 10.5 Chapter 11, Sections 11.3, 11.5 Chapter 12, Sections 12.3, 12.5 Chapter 13, Sections 13.3, 13.5 Chapter 14, Sections 14.3, 14.5 Chapter 15, Sections 15.3, 15.5 Chapter 16, Sections 16.3, 16.5 Chapter 17, Sections 17.3, 17.5 Chapter 18, Sections 18.3, 18.5 Chapter 19, Sections 19.3, 19.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
7.2.1. Changes to atmospheric environment	
• conduct of an atmospheric dispersion modelling of the main contaminants in order to estimate the contaminant concentrations present in the entire area that could potentially be affected by atmospheric emissions (Section 7.1.1, above) resulting from various project-related activities (sources);	Chapter 5, Section 5.5.1.2
• comparison of anticipated air quality concentration against the Canadian Ambient Air Quality Standards (CAAQS) for fine particulate matter;	Chapter 5, Section 5.5.1.2
• an estimate of the direct greenhouse gas emissions associated with all phases of the project as well as any mitigation measures proposed to minimize greenhouse gas emissions. This information is to be presented by individual pollutant and should also be summarized in CO_2 equivalent per year. The proponent is responsible for the following: ✓ justify all estimates and emission factors used in the analysis; ✓ provide the methods and calculations used for the analysis; ✓ compare and assess the level of estimated emissions of greenhouse gases to the regional, provincial and federal emission targets.	Chapter 5, Sections 5.5.2, 5.4, Appendix 5G
• changes in ambient noise levels; and	Chapter 5, Section 5.5.3
• changes in night-time light levels.	Chapter 5, Section 5.5.4
7.2.2. Changes to groundwater and surface water	
• changes to groundwater flow patterns, fluxes, and divides based on the results of groundwater flow modelling that incorporates changes related to the project;	Chapter 6, Sections 6.3.5, 6.5.1 Appendices 6A, 7B
• changes to turbidity, oxygen level, water temperature, ice regime, water quality;	Chapter 6, Sections 6.3.5, 6.5.2, Appendix 6B Chapter 7, Section 7.5.2, Appendices 7A, 7B
• changes in surface water quality associated with any project effluent releases or surface runoff;	Chapter 7, Section 7.5.2, Appendices 7A, 7B
• changes to the hydrological and hydrometric conditions;	Chapter 6, Section 6.5 Chapter 7, Section 7.5
• changes to groundwater recharge/discharge areas and any changes to groundwater infiltration areas;	Chapter 6, Sections 6.3.5, 6.5.1, Appendices 6A, 6B
• changes to groundwater quality associated with storage or release of any project effluents or drainage including surface runoff;	Chapter 6, Section 6.5.2, Appendices 6A, 7B Chapter 7, Section 7.5
• changes to water quality attributed to acid rock drainage and metal leaching associated with the storage of waste rock, ore, low grade ore, tailings, overburden and potential construction material, including: ✓ short term metal leaching properties; ✓ longer term rates of acid generation (if any) and metal leaching; ✓ estimates of the potential for mined materials (including waste rock, tailings and low grade ore) to be sources of acid rock drainage or metal leaching;	Chapter 6, Section 6.5 Chapter 7, Section 7.5 BSA.5, Attachments 5-A, 5-B

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
✓ estimates of potential time to the onset of acid rock drainage or metal leaching; ✓ quantity and quality of leachate from samples of tailings, waste rock, and ore; ✓ quantity and quality of effluent to be released from the site into the receiving waters; ✓ quality of humidity cell or column test liquid from acid rock testing; ✓ sensitivity analysis to assess the effects of imperfect segregation of waste rock; ✓ pit water chemistry during operation and post-closure, and pit closure management measures (e.g. flooding). This will include geochemical modelling of pit water quality in the post-closure period; and ✓ surface and seepage water quality from the waste rock dumps, tailings/waste rock impoundment facility, stockpiles and other infrastructure during operation and post-closure.	
7.2.3. Changes to riparian, wetland and terrestrial environments	
• overall description of changes related to landscape disturbance;	Chapter 9, Section 9.5
• changes to the habitat of migratory and non-migratory birds, with a distinction made between the two birds category, including losses, structural changes and fragmentation of riparian habitat (aquatic grassbeds, intertidal marshes) of terrestrial environments and wetlands frequented by birds (types of cover, ecological unit of the area in terms of quality, quantity, diversity, distribution and functions);	Chapter 10, Section 10.5.1 BSA.7
• changes to critical habitat for federally listed species at risk; and	Chapter 9, Section 9.5 BSA.7 BSA.8
• changes to key habitat for species important to current use of lands and resources for traditional purposes.	Chapter 9, Section 9.5
7.3. Predicted effects on valued components	
Based on the predicted changes to the environment identified in Section 7.2, the proponent is to assess the environmental effects of the project on the following VCs. All interconnections between VCs and between changes to multiple VCs will be described:	
7.3.1. Fish and fish habitat	
• the identification of any potential adverse effects to fish and fish habitat as defined in subsection 2(1) of the Fisheries Act, including the calculations of any potential habitat loss (temporary or permanent) in terms of surface areas (e.g. spawning grounds, fry-rearing areas, feeding), and in relation to watershed availability and significance. The assessment will include a consideration of:	Chapter 8, Section 8.5
✓ the geomorphological changes and their effects on hydrodynamic conditions and fish habitats (e.g. modification of substrates, dynamic imbalance, silting of spawning beds);	Chapter 8, Section 8.5
✓ the modifications of hydrological and hydrometric conditions on fish habitat and on the fish species' life cycle activities (e.g. reproduction, fry-rearing, movements);	Chapter 8, Section 8.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
✓ potential effects on riparian areas that could affect aquatic biological resources and productivity taking into account any anticipated modifications to fish habitat;	Chapter 8, Section 8.5
✓ any potential imbalances in the food web in relation to baseline conditions;	Chapter 8, Section 8.5
✓ effects on the primary and secondary productivity of water bodies and how project-related effects may affect fish food sources.	Chapter 8, Section 8.5
• the effects of changes to the aquatic environment on fish and their habitat, including:	Chapter 8, Section 8.5
✓ the anticipated changes in the composition and characteristics of the populations of various fish species, including shellfish and forage fish;	Chapter 8, Section 8.5
✓ any modifications in migration or local movements (upstream and downstream migration, and lateral movements) following the construction and operation of works (physical and hydraulic barriers);	Chapter 8, Section 8.5
✓ any reduction in fish populations as a result of potential overfishing due to increased access to the project area;	Chapter 8, Section 8.5
✓ any modifications and use of habitats by federally or provincially listed fish species;	Chapter 8, Section 8.5
• a discussion of how project timing correlates to key fisheries windows for freshwater and anadromous species, and any potential effects resulting from overlapping periods; and	Chapter 8, Section 8.5
• a discussion of how vibration caused by blasting may affect fish behaviour, such as spawning or migrations.	Chapter 8, Section 8.5
7.3.2. Migratory birds	
• direct and indirect adverse effects on migratory birds, including population level effects that could be caused by all project activities, including but not limited to:	Chapter 9, Section 9.5
✓ site preparation; construction and presence of project-associated infrastructure;	Chapter 9, Section 9.5
✓ deposit of harmful substances in waters that are frequented by migratory birds (e.g. tailing impoundment area);	Chapter 9, Section 9.5
✓ risk of collision of migratory birds with any project infrastructure and vehicles; and	Chapter 9, Section 9.5
✓ indirect effects caused by increased disturbance (e.g. noise, light, presence of workers), relative abundance movements, and losses or changes in migratory bird habitat, considering the critical breeding and migration periods for the birds.	Chapter 9, Section 9.5
7.3.3. Species at risk	
• the potential adverse effects of the project on species at risk listed under the Species at Risk Act and, where appropriate, its critical habitat; i.e. direct and indirect effects on the survival or recovery of species listed under the Species at Risk Act, including the Newfoundland marten; and	Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• the potential adverse effects of the project on species listed by the Committee on the Status of Endangered Wildlife in Canada classified as extirpated, endangered, threatened or of special concern (flora and fauna) and their critical habitat.	Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 BSA.8
7.3.3.1 Caribou	
• the assessment of the potential adverse effects on caribou that could be caused by all project activities will include a consideration of:	Chapter 11, Section 11.5
✓ direct or indirect effects to caribou populations;	Chapter 11, Section 11.5
✓ direct effects to caribou migration caused by alteration/destruction of caribou migratory routes; and	Chapter 11, Section 11.5
✓ indirect effects to caribou migration caused by increased disturbance (e.g. noise, light, presence of workers).	Chapter 11, Section 11.5
7.3.4. Indigenous peoples	
With respect to Indigenous peoples, a description and analysis, for each Indigenous group, of how changes to the environment caused by the project will affect health and socio-economic conditions, physical and cultural heritage including any structure, site or thing of historical, archaeological or paleontological importance, and current use of lands and resources for traditional purposes.	Chapter 17, Section 17.5
Health and Socio-Economic Conditions	
Baseline information gathered as part of the assessment of effects described in 5(1)(c) of CEAA 2012, as well as general information about Indigenous populations and sub-populations could inform the assessment of human health.	
• The assessment of impacts to human health will be based on effects of changes to the environment on Indigenous peoples' human health, focusing on effects on health outcomes or risks in consideration of, but not limited to, potential changes in air quality, noise exposure and effects of vibration from blasting, current and future availability of country foods, and water quality (drinking, recreational and cultural uses).	Chapter 14, Section 14.5
• When risks to human health due to changes in one or more of these components are predicted, the proponent is expected to complete a Human Health Risk Assessment (HHRA) examining all exposure pathways for pollutants of concern to adequately characterize potential risks to human health.	Chapter 14, Section 14.5 Chapter 17, Section 17.5
• The proponent must provide a justification if it determines that an assessment of the potential for contamination of country foods (or other exposure pathways, such as inhalation) is not required or if some contaminants are excluded from the assessment.	Chapter 14, Section 14.5.2
• Consider effects to mental and social well-being of Indigenous peoples. Where adverse health effects are predicted, any incidental effects such as effects on current use of lands and resources for traditional purposes should also be assessed.	Chapter 17, Sections, 17.5.1, 17.5.3

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
• Consider and document how effects of changes to the environment could be different for particular sub-populations within an Indigenous group (for example, women, youth, elders, specific families).	Chapter 17, Section 17.5
• The assessment of impacts to human health will assess effects of changes to the environment on Indigenous peoples' socio-economic conditions, including, but not limited to: • the use of navigable waters (including any water used for Indigenous transport) • forestry and logging operations • commercial fishing, hunting, trapping, and gathering activities • commercial outfitters • recreational use • food security • income inequity • changes at the community level that affect socio-economic conditions for Indigenous peoples as result of increased population, economic activity, cost of living, among other factors • non-commercial / trade economy	Chapter 17, Section 17.5.3
Physical and Cultural Heritage	
This assessment will assess effects of changes to the environment on Indigenous peoples' physical and cultural heritage, and structures, sites, or things of historical, archaeological, paleontological, or architectural significance to groups, including, but not limited to:	Chapter 17, throughout Chapter 18, throughout
• the loss or destruction of physical and cultural heritage	Chapter 17, Section 17.5.4 Chapter 18, throughout
• changes to access to physical and cultural heritage	Chapter 17, Section 17.5.4
• changes to the cultural value or importance associated with physical and cultural heritage	Chapter 17, Section 17.5.4
• changes to sacred, ceremonial or culturally important places, objects, or things.	Chapter 17, Section 17.5.4
• changes to visual aesthetics over the life of the Project	Chapter 17, Section 17.5.4
Current Use of Lands and Resources for Traditional Purposes	
• This assessment will characterize the effects (including cumulative effects) on the use or activity (e.g. hunting, fishing, trapping, plant gathering, and cultural practices) as a result of the underlying changes to the environment (i.e. how will the activity change if the project proceeds), using the approach described in the Agency's guide entitled *Technical Guidance for Assessing the Current Use of Lands and Resources for Traditional Purposes* under CEAA 2012. This assessment should consider the following interactions with:	
✓ Resources used, such as changes to the quantity, quality, and availability of resources and habitat, as well as to the sufficiency of resources required to conduct an activity or practice, including perception of effects, avoidance, and consideration of the seasonal round;	Chapter 17, Section 17.5

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
✓ Access to areas and resources without difficulty or additional cost used to conduct an activity or practice, as well as the opening up of areas to non-Indigenous populations for access and use, and consideration of preferred areas, timing of harvest, and options of traveling there in preferred manner; and	Chapter 17, Section 17.5
✓ Experience by Indigenous peoples, including changes that affect the spiritual and cultural experiences of the activity or practice, as well as sense of place and wellbeing, and the applicability and transmission of Indigenous knowledge, laws, customs and traditions.	Chapter 17, Section 17.5
• Using the interactions listed in the above bullet, the proponent should also consider the following in their assessments:	
✓ the cultural value or importance associated with traditional uses or areas affected by the project (e.g. values or attributes of the area that make it important as a place for inter-generational teaching of language or traditional practices, communal gatherings, integrity of preferred traditional practice areas);	Chapter 17, Section 17.5
✓ how timing of project activities (e.g. construction, blasting, discharges) have the potential to interact with the timing of traditional practices, and any potential effects resulting from overlapping periods;	Chapter 17, Section 17.5
✓ how environmental effects to lands and resources could affect the use and associated activities;	Chapter 17, Section 17.5
✓ consideration of the regional context for traditional use, and the value of the project area in that regional context, including alienation of lands from traditional use; and	Chapter 17, Section 17.5
✓ an assessment of the potential to return affected areas to pre-project conditions to support traditional practices (including the identification of end land use goals).	Chapter 17, Section 17.5
• Other effects of changes to the environment on groups should be reflected as necessary.	Chapter 17, Section 17.5
The proponent is expected to provide mitigation measures for effects of changes to the environment on Indigenous peoples pursuant to section 5 (1)(c) of CEAA, 2012 (see Part 2, Section 7.4. of these guidelines).	Chapter 17, Section 17.4
7.3.5. Other valued components that may be affected as a result of a federal decision or due to effects on federal lands, another province or outside Canada	
If there is the potential for a change to the environment arising as a result of a federal decision(s), for example an authorization under section 35 of the *Fisheries Act*, the EIS should include a description of the specific project components for which a federal authorization/decision is required, and an assessment of any other VCs (not already covered in other subsections of these guidelines) that may be affected by the changes to the environment caused by these specific project components. If there is the potential for the project to result in environmental changes on federal lands (or waters), another province, or another country, then VCs of importance not already identified should be included. For example, if the project will result in the generation of greenhouse gas emissions, the EIS should include a description of the project's greenhouse gas emissions in a regional, provincial, national, or international context if applicable.	Noted

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
7.4. Mitigation measures	
Every EA conducted under CEAA 2012 will consider measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project. Under CEAA 2012, mitigation measures include measures to eliminate, reduce or control the adverse environmental effects of a designated project, as well as restitution for damage to the environment through replacement, restoration, compensation, or other means. Measures will be specific, achievable, measurable, and verifiable, and described in a manner that avoids ambiguity in intent, interpretation, and implementation. Mitigation measures may be considered for inclusion as conditions in the EA decision statement and/or in other compliance and enforcement mechanisms provided by other authorities' permitting or licensing processes.	Noted
As a first step, the proponent is encouraged to use an approach based on the avoidance and reduction of the effects at the source. Such an approach may include the modification of the design of the project or relocation of project components.	Noted
The EIS will describe the standard mitigation practices, policies and commitments that constitute technically and economically feasible mitigation measures and that will be applied as part of standard practice regardless of location. The EIS will then describe the project's environmental protection plan and its environmental management system, through which the proponent will deliver this plan. The plan will provide an overall perspective on how potentially adverse effects would be minimized and managed over time. The EIS will further discuss the mechanisms the proponent would use to require its contractors and sub-contractors to comply with these commitments and policies and with auditing and enforcement programs.	Chapter 2, Section 2.7.4 Chapter 23, Section 23.3.1
The EIS will then describe mitigation measures that are specific to each environmental effect identified. Mitigation measures will be written as specific commitments that clearly describe how the proponent intends to implement them and the environmental outcome the mitigation measure is designed to address. The EIS will identify and describe mitigation measures to avoid or lessen potential adverse effects on species and/or critical habitat listed under the *Species at Risk Act*. These measures will be consistent with any applicable recovery strategy and action plans. The EIS will also identify and describe mitigation measures to avoid or lessen adverse effects on listed COSEWIC species.	Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4
The EIS will specify the actions, works, minimal disturbance footprint techniques, best available technology, corrective measures, or additions planned during the project's various phases to eliminate or reduce the significance of adverse effects. The EIS will also present an assessment of the effectiveness of the proposed technically and economically feasible mitigation measures. The reasons for	Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4

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EIS Guidelines	EIS Reference
determining if the mitigation measure reduces the significance of an adverse effect will be made explicit. The proponent is also encouraged to identify mitigation measures for effects that are adverse although not significant. The EIS will indicate what other technically and economically feasible mitigation measures were considered and explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation measures will be justified. The EIS will identify who is responsible for the implementation of these measures and the system of accountability.	Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 23, Section 23.3.1
Where mitigation measures are proposed to be implemented for which there is little experience or for which there is some question as to their effectiveness, the potential risks and effects to the environment should those measures not be effective will be clearly and concisely described. In addition, the EIS will identify the extent to which technological innovations will help mitigate environmental effects. Where possible, it will provide detailed information on the nature of these measures, their implementation, management, and the requirements of the follow-up program.	Chapter 5, Section 5.9 Chapter 6, Section 6.9 Chapter 7, Section 7.9 Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9 Chapter 13, Section 13.9 Chapter 14, Section 14.9 Chapter 15, Section 15.9 Chapter 16, Section 16.9 Chapter 17, Section 17.9 Chapter 18, Section 18.9 Chapter 19, Section 19.9 Chapter 23, Section 23.3.2
The EIS will document specific suggestions raise by each Indigenous group for mitigating the effects of changes to the environment on Aboriginal peoples (section 5(1)(c) of CEAA 2012). For those mitigation measures intended to address effects of changes to the environment on Indigenous peoples, the proponent must discuss the residual effects with the Indigenous groups identified in Part 2, Section 5 of these guidelines prior to submitting the EIS.	Chapter 3, Section 3.4.3.5 and 3.4.4.5
Adaptive management is not considered as a mitigation measure, but if the follow-up program (refer to Section 8 below) indicates that corrective action is required, the proposed approach for managing the action should be identified.	Chapter 5, Section 5.9 Chapter 6, Section 6.9 Chapter 7, Section 7.9 Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9

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EIS Guidelines	EIS Reference
	Chapter 13, Section 13.9 Chapter 14, Section 14.9 Chapter 15, Section 15.9 Chapter 16, Section 16.9 Chapter 17, Section 17.9 Chapter 18, Section 18.9 Chapter 19, Section 19.9
7.5. Significance of residual effects	
After having established the technically and economically feasible mitigation measures, the EIS will present any residual environmental effects of the project on the VCs identified in Section 7.3 above. For those VCs related to effects of changes to the environment on Indigenous peoples, the proponent must discuss the residual effects with the Indigenous groups identified in Part 2, Section 6 of these guidelines prior to submitting the EIS. The residual effects, even if very small or deemed insignificant, will be described.	Chapter 5, Section 5.6 Chapter 6, Section 6.6 Chapter 7, Section 7.6 Chapter 8, Section 8.6 Chapter 9, Section 9.6 Chapter 10, Section 10.6 Chapter 11, Section 11.6 Chapter 12, Section 12.6 Chapter 13, Section 13.6 Chapter 14, Section 14.6 Chapter 15, Section 15.6 Chapter 16, Section 16.6 Chapter 17, Section 17.6 Chapter 18, Section 18.6 Chapter 19, Section 19.6
The EIS will then provide a detailed analysis of the significance of the residual environmental effects that are considered adverse following the implementation of mitigation measures, using the Agency's guidance on determining whether a project is likely to cause significant adverse environmental effects.	Chapter 5, Section 5.6 Chapter 6, Section 6.6 Chapter 7, Section 7.6 Chapter 8, Section 8.6 Chapter 9, Section 9.6 Chapter 10, Section 10.6 Chapter 11, Section 11.6 Chapter 12, Section 12.6 Chapter 13, Section 13.6 Chapter 14, Section 14.6 Chapter 15, Section 15.6 Chapter 16, Section 16.6 Chapter 17, Section 17.6 Chapter 18, Section 18.6 Chapter 19, Section 19.6
The EIS will identify the criteria used to assign significance ratings to any predicted adverse effects. It will contain clear and sufficient information to enable the Agency or review panel, technical and regulatory agencies, Indigenous	Chapter 5, Section 5.3.2 Chapter 6, Section 6.3.2

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EIS Guidelines	EIS Reference
groups, and the public to review the proponent's analysis of the significance of effects. For those predicted adverse effects that relate to effects of the changes to the environment on Indigenous peoples, the proponent will consider the views of the Indigenous groups in the determination of the definitions of the significance criteria. The EIS will document the terms used to describe the level of significance.	Chapter 7, Section 7.3.2 Chapter 8, Section 8.3.2 Chapter 9, Section 9.3.2 Chapter 10, Section 10.3.2 Chapter 11, Section 11.3.2 Chapter 12, Section 12.3.2 Chapter 13, Section 13.3.2 Chapter 14, Section 14.3.2 Chapter 15, Section 15.3.2 Chapter 16, Section 16.3.2 Chapter 17, Section 17.3.2 Chapter 18, Section 18.3.2 Chapter 19, Section 19.3.2
The following criteria should be used in determining the significance of residual effects: • magnitude • geographic extent • timing • duration • frequency • reversibility • ecological and social context • existence of environmental standards, guidelines, or objectives for assessing the effect	Chapter 5, Section 5.5.5 Chapter 6, Section 6.5.3 Chapter 7, Section 7.5.3 Chapter 8, Section 8.5.4 Chapter 9, Section 9.5.6 Chapter 10, Section 10.5.3 Chapter 11, Section 11.5.4 Chapter 12, Section 12.5.3 Chapter 13, Section 13.5.3 Chapter 14, Section 14.5.3 Chapter 15, Section 15.5.5 Chapter 16, Section 16.5.4 Chapter 17, Section 17.5.5 Chapter 18, Section 18.5.2 Chapter 19, Section 19.5.4
In assessing significance against these criteria, the proponent will, where possible, use relevant existing regulatory documents, environmental standards, guidelines, or objectives such as prescribed maximum levels of emissions or discharges of specific hazardous agents into the environment. The EIS will contain a section which explains the assumptions, definitions and limits to the criteria mentioned above in order to maintain consistency between the effects on each VC.	Chapter 5, Sections 5.3.5 and 5.6 Chapter 6, Section Sections 6.3.5 and 6.6 Chapter 7, Sections 7.3.5 and 7.6 Chapter 8, Sections 8.3.5 and 8.6 Chapter 9, Sections and 9.3.5, 9.6 Chapter 10, Sections 10.3.5, 10.6 Chapter 11, Sections 11.3.5, 11.6 Chapter 12, Sections 12.3.5, 12.6 Chapter 13, Sections 13.3.5, 13.6 Chapter 14, Sections 14.3.5, 14.6 Chapter 15, Sections 15.3.5, 15.6 Chapter 16, Sections 16.3.5, 16.6

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 17, Sections 17.3.5, 17.6 Chapter 18, Sections 18.3.5, 18.6 Chapter 19, Sections 19.3.5, 19.6
Where significant adverse effects are identified, the EIS will set out the probability (likelihood) that they will occur, and describe the degree of scientific uncertainty related to the data and methods used within the framework of this environmental analysis.	Chapter 11, Sections 11.6, 11.7 Chapter 23, Section 23.2.1
7.6. Other effects to consider	
7.6.1. Effects of potential accidents or malfunctions	
The failure of certain works caused by equipment malfunctions, human error, or exceptional natural events (e.g. flooding, earthquake, forest fire) could cause major effects. The proponent will therefore conduct a qualitative analysis of the risks of accidents and malfunctions, determine their effects, and present preliminary emergency response measures.	Chapter 21, throughout
Taking into account the lifespan of different project components, the proponent will identify the probability of potential accidents and malfunctions related to the project, including an explanation of how those events were identified, potential consequences (including the environmental effects as defined in section 5 of CEAA 2012), the plausible worst-case scenarios and the effects of these scenarios. Fate and behaviour modelling of potential spills of hydrocarbons, sodium cyanide and ammonium nitrate to waters frequented by fish should be considered for all seasons.	Chapter 21, throughout
This assessment will include an identification of the magnitude of an accident and/or malfunction, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment during the accident and malfunction events and would potentially result in an adverse environmental effect as defined in section 5 of CEAA 2012.	Chapter 21, throughout
The EIS will describe the safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures that would be put in place if such events do occur.	Chapter 21, throughout
7.6.2. Effects of the environment on the project	
The EIS will take into account how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events (e.g. flooding, drought, ice jams, landslides, avalanches, erosion, subsidence, fire, outflow conditions and seismic events), could adversely affect the project and how this in turn could result in effects to the environment (e.g. extreme environmental conditions result in/ contribute to and/or complicate malfunctions and accidental events). These events will be considered in different probability patterns (e.g. 5-year flood vs. 100-year flood).	Chapter 22, throughout
The EIS will provide details of planning, design and construction strategies intended to minimize the potential environmental effects of the environment on the project.	Chapter 22, throughout
7.6.3. Cumulative effects assessment	
The proponent will identify and assess the project's cumulative effects using the approach described in the Agency's guidance documents related to cumulative environmental effects.	Chapter 20, throughout

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
Cumulative effects are defined as changes to the environment due to the project combined with the existence of other past, present and reasonably foreseeable physical activities. Cumulative effects may result if: • the implementation of the project may cause direct residual adverse effects on the VC, taking into account the application of technically and economically feasible mitigation measures; and, • the same VC may be affected by other past, present and future physical activities VCs that would not be affected by the project or would be affected positively by the project can, therefore, be omitted from the cumulative effects assessment. A cumulative effect on an environmental component may, however, be important even if the assessment of the project's effects on this component reveals that the effects of the project are minor.	Chapter 20, throughout
In its EIS, the proponent will:	
• Identify and provide a rationale for the VCs that will constitute the focus of the cumulative effects assessment, focusing the cumulative effects assessment on the VCs most likely to be affected by the project and other project and activities. To this end, the proponent must consider, without limiting itself thereto, the following components likely to be affected by the project: ✓ fish and fish habitat, including salmon and other valued fish species; ✓ migratory birds; ✓ species at risk, including caribou and Newfoundland marten; ✓ Indigenous peoples; and ✓ any VCs associated with subsection 5(2) of CEAA 2012.	Chapter 20, throughout
• Identify and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC selected. The boundaries for the cumulative effects assessments will generally be different for each VC considered. These cumulative effects boundaries will also generally be larger than the boundaries for the corresponding project effects;	Chapter 20, Section 21.1.2
• Identify the sources of potential cumulative effects. Specify other projects or activities that have been or that are likely to be carried out that could cause effects on each selected VC within the boundaries defined, and whose effects would act in combination with the residual effects of the project. This assessment may consider the results of any relevant study conducted by a committee established under section 73 or 74 of CEAA 2012;	Chapter 20, Section 20.1.3
• Assess the cumulative effects on each VC selected by comparing the future scenario with the project and without the project. Effects of past activities (activities that have been carried out) will be used to contextualize the current state of the VC. In assessing the cumulative effects on current use of lands and resources for traditional purposes, the assessment will focus on the cumulative effects on the relevant activity (e.g. hunting, fishing, trapping, plant harvesting);	Chapter 20, Sections 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9, 20.10, 20.11, 20.12, 20.13, 20.14,
• Describe the mitigation measures that are technically and economically feasible. The proponent shall assess the effectiveness of the measures applied to mitigate the cumulative effects. In cases where measures exist that are beyond the scope of the proponent's responsibility that	Chapter 20, Sections 20.2, 20.3, 20.4, 20.5, 20.6, 20.7, 20.8, 20.9, 20.10, 20.11, 20.12, 20.13, 20.14,

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
could be effectively applied to mitigate these effects, the proponent will identify these effects and the parties that have the authority to act. In such cases, the EIS will summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term;	
• Determine the significance of the cumulative effects; and	Chapter 20, throughout
• Develop a follow-up program to verify the accuracy of the assessment or to dispel any uncertainty concerning the effectiveness of mitigation measures for certain cumulative effects.	Chapter 20, throughout
The proponent is encouraged to consult with key stakeholders and Indigenous groups prior to finalizing the choice of VCs and the appropriate boundaries to assess cumulative effects.	Chapter 3, Sections 3.3, 3.4, 3.5
8. SUMMARY OF ENVIRONMENTAL EFFECTS ASSESSMENT	
The EIS will contain a table summarizing the following key information:	Chapter 23, Section 23.2.1
• potential environmental effects on VCs;	Chapter 23, Section 23.2.1
• proposed mitigation measures to address the effects identified above; and	Chapter 23, Section 23.2.1
• potential residual effects and the significance of the residual environmental effects.	Chapter 23, Section 23.2.1
The summary table will be used in the EA Report prepared by the Agency or will be considered by the review panel. An example of a format for the key summary table is provided in Appendix 1 of this [EIS Guidelines] document.	Noted
In a second table, the EIS will summarize all key mitigation measures and commitments made by the proponent which will more specifically mitigate any significant adverse effects of the project on VCs (i.e. those measures that are essential to ensure that the project will not result in significant adverse environmental effects).	Chapter 23, Section 23.2.1
9. FOLLOW-UP AND MONITORING PROGRAMS	
A follow-up program is designed to verify the accuracy of the effects assessment and to determine the effectiveness of the measures implemented to mitigate the adverse effects of the project. Considerations for developing a follow-up program include: • whether the project will impact environmentally sensitive areas/VCs or protected areas or areas under consideration for protection; • the nature of Indigenous and public concerns raised about the project; • suggestions from Indigenous groups regarding the design of and involvement in follow-up and monitoring programs; • incorporation of Indigenous knowledge, where available; • the accuracy of predictions; • whether there is a question about the effectiveness of mitigation measures or the proponent proposes to use new or unproven techniques and technology; • the nature of cumulative environmental effects; • the nature, scale, and complexity of the program; and • whether there was limited scientific knowledge about the effects in the EA.	Chapter 2, Sections 2.7.3, 2.7.4 Chapter 23, throughout

Table E.1 Concordance with Guidelines for the Preparation of an Environmental Impact Statement pursuant to the *Canadian Environmental Assessment Act, 2012* for the Valentine Gold Project, Marathon Gold Corporation (Federal EIS Guidelines)

EIS Guidelines	EIS Reference
9.1. Follow-up program	
The EIS shall present a preliminary follow-up program and shall include: • objectives of the follow-up program and the VCs targeted by the program; • list of elements requiring follow-up; • number of follow-up studies planned as well as their main characteristics (list of parameters to be measured, planned implementation timetable, etc.); • intervention mechanism used in the event that an unexpected deterioration of the environment is observed; • mechanism to disseminate follow-up results among the concerned populations; • accessibility and sharing of data for the general population; • opportunity for the proponent to include the participation of Indigenous groups and stakeholders on the affected territory, during the development and implementation of the program; and • involvement of local and regional organizations in the design, implementation and evaluation of the follow-up results as well as any updates, including a communication mechanism between these organizations and the proponent.	Chapter 2, Section 2.7.3 Chapter 23, throughout
9.2. Monitoring	
The proponent will prepare an environmental monitoring program for all phases of the project.	Chapter 2, Section 2.7.3 Chapter 23, throughout
Specifically, the environmental impact statement shall present an outline of the preliminary environmental monitoring program, including the: • identification of the interventions that pose risks to one or more of the environmental and/or VCs and the measures and means planned to protect the environment; • identification of regulatory instruments that include a monitoring program requirement for the VCs; • description of the characteristics of the monitoring program where foreseeable (e.g. location of interventions, planned protocols, list of measured parameters, analytical methods employed, schedule, human and financial resources required); • description of the proponent's intervention mechanisms in the event of the observation of non-compliance with the legal and environmental requirements or with the obligations imposed on contractors by the environmental provisions of their contracts; • guidelines for preparing monitoring reports (number, content, frequency, format) that will be sent to the authorities concerned; and • plans to engage Indigenous groups in monitoring, where appropriate.	Chapter 2, Section 2.7.3 Chapter 23, throughout

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
1.0 INTRODUCTION	
The Project requires Environmental Assessment (EA) under the Newfoundland and Labrador *Environmental Protection Act* (NLEPA), specifically, the preparation of an Environmental Impact Statement (EIS). These requirements are discussed in further detail in Section 2.2.	Noted
1.1 Purpose of the Environmental Impact Statement Guidelines	
The purpose of these guidelines is to identify for the proponent the nature, scope, and minimum information and analysis required in preparing the EIS.	Noted
These guidelines shall not be regarded as either restrictive or exhaustive. Concerns other than those identified herein may arise during the investigations associated with the EIS and additional detail, studies, and/or examination of components may be required. The provincial government is prepared to provide advice and assistance throughout the preparation of the EIS and the required baseline studies with regard to the identification of environmental concerns and appropriate assessment methodology.	Noted
For the purpose of these guidelines: "Environment" includes: a) air, land and water; b) plant and animal life, including human life; c) the social, economic, recreational, cultural and aesthetic conditions and factors that influence the life of humans or a community; d) a building, structure, machine or other device or thing made by humans; e) a solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from the activities of humans; or f) a part or a combination of those things referred to in subparagraphs (a) to (f) and the interrelationships between two or more of them. “Environmental effect” means a change in the present or future environment that would result from an undertaking. “Follow-up Program” means a program: a) to determine the effectiveness of mitigation measures, and b) for compliance with terms and conditions applicable to the release. “Minister” means the provincial Minister of the Department of Municipal Affairs and Environment.	Noted
“Undertaking” means an enterprise, activity, project, structure, work or proposal and a modification, abandonment, demolition, decommissioning, rehabilitation and an extension of them that may, in the opinion of the minister, have a significant environmental effect. The term undertaking refers to a project that shall be registered for environmental assessment. The terms “project” and “undertaking” are used interchangeably in these guidelines. A “proponent” may be a person, corporation or government department that owns, manages, or controls a proposed project.	

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
1.2 Guiding Principles	
1.2.1 Environmental Assessment as a Planning Tool	
Environmental assessment is a planning tool used to ensure that projects are considered in a careful and precautionary manner in order to avoid or mitigate the possible adverse effects of development on the environment. EA also encourages decision makers to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy.	Noted
EA of this project shall, in a manner consistent with the purposes above:	
• consider and evaluate alternatives to the Project, or its components, and alternative means of carrying out the Project, or its components, and assess their technical and economic feasibility;	Chapter 2, Sections 2.10, 2.11
• document public consultation activities in a manner that is transparent;	Chapter 3, Sections 3.4, 3.5
• propose measures to avoid or mitigate adverse environmental effects;	Chapter 2, Section 2.7 Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 21, Section 21.5 Chapter 22, Sections 22.3.1.3, 22.3.2.3, 22.3.3.3
• propose measures to enhance or prolong beneficial environmental effects;	Chapter 2, Section 2.9.4 Chapter 5, Sections 5.4, 5.9 Chapter 6, Sections 6.4, 6.9 Chapter 7, Sections 7.4, 7.9 Chapter 8, Sections 8.4, 8.9 Chapter 9, Sections 9.4, 9.9 Chapter 10, Sections 10.4, 10.9 Chapter 11, Sections 11.4, 11.9 Chapter 12, Sections 12.4, 12.9

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• describe residual (post-mitigation) environmental effects that are beneficial or harmful that are likely to be caused by the undertaking regardless of the proper application of all control, mitigation, enhancement and remedial measures to be proposed in the EIS;	Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5 Chapter 21, Section 21.5 Chapter 22, Section 22.3
• assess the cumulative environmental effects of the Project in combination with other projects and activities that have been or will be carried out;	Chapter 20, throughout
• predict whether or not the project, in combination with other projects or activities that have been or will be carried out, is likely to cause adverse environmental effects after mitigation measures are implemented;	Chapter 20, Sections 20.2.5, 20.3.5, 20.4.5, 20.5.5, 20.6.5, 20.7.5, 20.8.5, 20.9.5, 20.10.5, 20.11.5, 20.12.5, 20.13.5, 20.14.5, 20.15.5, 20.16.5
• specifically list and cite all sources of information in the EIS;	Chapter 1, Section 1.5 Chapter 2, Section 2.12 Chapter 4, Section 4.12 Chapter 5, Section 5.10 Chapter 6, Section 6.10 Chapter 7, Section 7.10 Chapter 8, Section 8.10 Chapter 9, Section 9.10 Chapter 10, Section 10.10 Chapter 11, Section 11.10 Chapter 12, Section 12.10 Chapter 13, Section 13.10 Chapter 14, Section 14.10 Chapter 15, Section 15.10 Chapter 16, Section 16.10 Chapter 17, Section 17.10 Chapter 18, Section 18.11

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 19, Section 19.10 Chapter 20, Section 20.18 Chapter 21, Section 21.7 Chapter 22, Section 22.5 Chapter 23 Chapter 24.8 BSAs 1 - 10
• outline the design of studies necessary to provide additional information for the preparation of the EIS;	BSAs 1-10
• address concerns identified during the public information sessions by including within the EIS specific responses to those concerns and, where appropriate, specific proposals for measures to deal with them; and	Chapter 3, Sections 3.4 and 3.5 Chapter 5, Section 5.1.2 Chapter 6, Section 6.1.2 Chapter 7, Section 7.1.2 Chapter 8, Section 8.1.2 Chapter 9, Section 9.1.2 Chapter 10, Section 10.1.2 Chapter 11, Section 11.1.2 Chapter 12, Section 12.1.2 Chapter 13, Section 13.1.2 Chapter 14, Section 14.1.2 Chapter 15, Section 15.1.2 Chapter 16, Section 16.1.2 Chapter 17, Section 17.1.2 Chapter 18, Section 18.1.2 Chapter 19, Section 19.1.2
• as soon as they have been completed, provide copies of all reports or studies undertaken in order to satisfy these guidelines.	Noted
1.2.2 Sustainable Development	
Sustainable development means development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. The EIS shall consider the extent to which the Project would meet this objective.	Noted
EA provides: • a systematic approach for identifying, predicting and evaluating the potential environmental effects of projects before decisions are made; • the means to identify mitigation measures for adverse effects; • the integration of environmental factors into the planning and decision-making process in a manner that promotes sustainable development and contributes to decision making that can ultimately provide net ecological, economic and social benefits to society.	Noted
The EA of the Project, including its analysis of alternatives, shall take into account the relationships and interactions among the various components of the ecosystems, including the extent to which biological diversity may be affected by	Chapter 2, Sections 2.10, 2.11 Chapter 5, Section 5.5 Chapter 6, Section 6.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
the Project, and how the Project meets the needs of the present as well as future populations.	Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 Chapter 23, Section 23.5
1.2.3 Precautionary Approach	
One of the purposes of EA is to ensure that Proponents consider the Precautionary Principle. If an undertaking has the potential to cause a threat of serious or irreversible damage to the environment, the Proponent shall take all reasonable environmental protection measures to protect the environment, even if full scientific knowledge is lacking.	Chapter 2, Section 2.7.2 Chapter 4, Sections 4.1, 4.4.5
The Proponent shall indicate how the Precautionary Principle was considered in the design of the Project in at least the following ways: • demonstrate that all aspects of the Project have been examined and planned in a careful and precautionary manner to prevent or minimize serious or irreversible damage to the environment, especially with respect to environmental functions and integrity, considering system tolerance and resilience, and/or the human health of current or future generations; • outline and justify the assumptions made about the effects of all aspects of the Project and the approaches to minimize these effects; • evaluate alternative means of carrying out the Project and compare them in light of risk avoidance and adaptive management capacity; • in designing and operating the Project, demonstrate that priority has been given to strategies that avoid the creation of adverse effects; • develop contingency plans that explicitly address accidents and malfunctions, e.g., environmental emergency plans; • identify any proposed follow-up and monitoring activities, particularly in areas where scientific uncertainty exists, in the prediction of effects or effectiveness of proposed mitigation measures; and • present public views on the acceptability of all of the above.	Chapter 2, Section 2.7.2 Chapter 4, Sections 4.1, 4.4.5
2.0 THE ENVIRONMENTAL ASSESSMENT PROCESS	
2.1 Contact for the Environmental Assessment	
Eric Watton (EAC Chair) Environmental Scientist Environmental Assessment Division Department of Environment and Climate Change PO Box 8700 St. John's NL A1B 4J6 Telephone: (709) 729-0834 Email: ericwatton@gov.nl.ca	Noted

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
2.2 Environmental Assessment Requirements	
2.2.1 Newfoundland and Labrador *Environmental Protection Act*	
Any mining of a mineral as defined in the *Mineral Act* in Newfoundland and Labrador is subject to EA under the NLEPA and Environmental Assessment Regulations, 2003. The Environmental Assessment Division of the Newfoundland and Labrador Department of Municipal Affairs and Environment (MAE) administers the process including: • consulting at every stage with interested government departments and the public; • evaluating submissions by Proponents and reviewers; • advising the Minister on potential environmental effects prior to decisions; and • monitoring released projects to ensure compliance and effectiveness of mitigation.	Noted
An undertaking that is triggered under the *Environmental Assessment Regulations* is required to be registered for examination by MAE. The registration outlines the proposed project and describes how it will affect the bio-physical and socio-economic environments. The Registration is referred to provincial and federal government departments for review and comment. The Registration is also publicly available for comment. At the conclusion of the review period, the Minister has four options: release the undertaking from further assessment, require an Environmental Preview Report (EPR), require an EIS, or notify the Lieutenant-Governor in Council if the undertaking is contrary to law or to a policy that the Lieutenant-Governor in Council has declared to be the policy of the government of the province. On June 13, 2019 the Minister advised Marathon Gold Corporation that an EIS was required.	Noted
2.2.2 Delegated EIS Preparation	
Pursuant to the requirements of Section 51(1)(b) of the *NLEPA*, the Proponent has been delegated the task of preparing the EIS. The EIS should be prepared according to these guidelines and, once completed, the Proponent shall submit printed and electronic copies of the EIS to the involved government agencies in the quantities specified. In addition, the Proponent shall make printed copies of the EIS and the Plain Language Summary (PLS) of the EIS available at public viewing centers (to be designated) in the project vicinity.	Noted
Baseline studies will be required to define baseline conditions, and to support the evaluation of environmental effects and/or the development of mitigation measures as well as monitoring and follow up programs. The required baseline studies are discussed further in section 4.2.	Noted
2.3 Consultation	
The public will have several opportunities to participate in the EA and provide their views on the potential environmental effects of the Project.	Chapter 3, throughout
Electronic and hard copy versions of documents will be provided to MAE and these will be made available for public review. Key documents will be available on the MAE Environmental Assessment webpage for this EA.	Noted
Public comment periods will be announced in newspapers and on the MAE Environmental Assessment webpage mentioned above. Interested parties may contact the EA Committee Chair identified in Section 2.1 for further information regarding comment periods.	Noted

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The Proponent is required to provide current information about the project to the public and especially to the communities likely to be most affected by the project as early as possible in the review process. This will ensure that all parties have an opportunity to gain an understanding of the proposed Project and may facilitate their continued involvement in the EA process. During the preparation of the EIS, the Proponent must hold public information sessions to provide information concerning the Project to the people whose environment may be affected by the undertaking. The Proponent must record and respond to the concerns of the local communities regarding the potential environmental effects of the Project.	Noted
2.3.1 Record of Public Consultation	
The EIS describe all public consultation activities undertaken by the Proponent during, the EA. It should describe key stakeholder groups, summarize comments heard, identify key issues of concern raised by the public and the Proponent's responses.	Chapter 3, Sections 3.4, 3.5 Appendix 3A Appendix 3C
3.0 SCOPE OF PROJECT, FACTORS TO BE CONSIDERED AND SCOPE OF THE FACTORS	
3.1 Scope of the Project	
The EIS will examine all activities and physical works associated with the different phases of this Project, i.e., construction, development, production, operation and maintenance, rehabilitation and closure of the proposed Project, as described in the Proponent's registration document dated April 5, 2019 and registered on April 16, 2019. These activities and physical works include but are not limited to, the activities listed below.	Chapter 2, Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6
• all open pits, including dewatering infrastructure to dewater and to manage groundwater levels;	Chapter 2, Sections 2.3.1, 2.5.1
• all upgrades to existing access roads and details on the alternate access road(s);	Chapter 2, Sections 2.3.10, 2.11
• transmission line from Star Lake to the project area;	Chapter 2, Sections 2.3.8, 2.4.8
• waste rock disposal areas;	Chapter 2, Section 2.3.2.1
• organics and overburden piles;	Chapter 2, Section 2.3.2.2
• storm water management infrastructure;	Chapter 2, Section 2.3.5
• process plant facilities;	Chapter 2, Section 2.3.3
• ROM stockpile;	Chapter 2, Section 2.3.2.3
• heap leach process facilities;	Chapter 2, Section 2.1
• tailings management facility (TMF), including treatment plant and CN destruction plant;	Chapter 2, Sections 2.3.4, 2.5.3
• ancillary infrastructure to support the mine (e.g., administrative and dry buildings, substation and distribution lines, communication lines, pumphouse, sewage and water treatment units, fuel supply and storage, etc.);	Chapter 2, Sections 2.3.8, 2.3.9, 2.3.12, 2.3.13
• progressive rehabilitation, closure and reclamation activities;	Chapter 2, Section 2.6
• accommodation camp facilities and related structures;	Chapter 2, Section 2.3.11

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• all effluent generation, treatment systems, handling and discharge locations, as well as all anticipated effluents and contaminants, including ammonia residue from blasting operations;	Chapter 2, Section, 2.3.13, 2.3.13, 2.7.4
• air emission sources including dust lift-off (e.g., diesel generators, heavy equipment, roads, waste rock, crushing, grinding, process heaters, dryers, blasting, roads, pits, laydown areas, stockpiles, waste rock storage, parking lots, etc.);	Chapter 2, Section 2.7.4.2
• greenhouse gas (GHG) emissions sources;	Chapter 5, Section 5.2.2
• noise sources, expected noise levels and noise monitoring locations;	Chapter 2, Section 2.7.4.3
• sources and frequency of vibrations including seismic loading (Victoria Dam and wildlife);	Chapter 2, Section 2.5.1.4 Chapter 19, Section 19.5
• water management control structures or diversions that may be required to facilitate the project;	Chapter 2, Section 2.3.5
• all other infrastructure construction;	Chapter 2, Section 2.4
• fuel storage systems, including secondary containment (dykes) and a list of fuels and quantities;	Chapter 2, Sections 2.3.12, 2.3.13
• storage, transport, preparation and usage, quantities, and final discharge of all process reagents and effluents;	Chapter 2, Sections 2.3.13, 2.7.4.4
• storage, transport, preparation, quantities, usage and management of explosives;	Chapter 2, Section 2.3.12
• water quality sampling locations in the watersheds potentially affected by the project;	Chapter 2, Section 2.3.6 Chapter 7, Section 7.2.2
• locations for real time water monitoring stations including hydrometric (water level/flow); water quality, groundwater and climate stations to be established in partnership with GNL;	Chapter 7, Section 7.2.2
• any quarries that are contemplated as part of the Project;	Not Required
• viewscapes that could be affected by the Project;	Chapter 5, Section 5.2.2
• sources of lighting emissions associated with the project; and	Chapter 5, Section 5.2.2
• cyanide management.	Chapter 2, Sections 2.3.3, 2.5.2, 2.7.2
3.2 Factors to be Considered	
The EIS shall consider:	
• the purpose of the Project;	Chapter 2, Section 2.9
• alternatives to the Project;	Chapter 2, Section 2.10
• the need for the Project;	Chapter 2, Section 2.9
• alternative means of carrying out the Project or components of the Project and assess their technical and economic feasibility, and the environmental effects of any such alternative means;	Chapter 2, Section 2.11

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• the environmental effects of the project, including the environmental effects of malfunctions, spills or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out in relation to the identified valued ecosystem components;	Chapters 5 through 22
• measures that would mitigate any adverse environmental effects of the Project;	Chapter 2, Section 2.7 Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 21, Section 21.5 Chapter 22, Sections 22.3.1.3, 22.3.2.3, 22.3.3.3
• measures that would enhance or prolong beneficial environmental effects;	Chapter 2, Section 2.9.4 Chapter 5, Sections 5.4, 5.9 Chapter 6, Sections 6.4, 6.9 Chapter 7, Sections 7.4, 7.9 Chapter 8, Sections 8.4, 8.9 Chapter 9, Sections 9.4, 9.9 Chapter 10, Sections 10.4, 10.9 Chapter 11, Sections 11.4, 11.9 Chapter 12, Sections 12.4, 12.9
• residual (post-mitigation) environmental effects that are beneficial or harmful that are likely to be caused by the undertaking regardless of the proper application of all control, mitigation, enhancement and remedial measures to be proposed in the EIS;	Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5 Chapter 21, Section 21.5 Chapter 22, Section 22.3
• whether or not the project, in combination with other projects or activities that have been or will be carried out, is likely to cause significant adverse environmental effects after mitigation measures are implemented;	Chapter 20
• comments from the public that are received in accordance with NLEPA and regulations by including within the EIS specific responses to those concerns and, where appropriate, specific proposals for measures to deal with them;	Chapter 3, Sections 3.4, 3.5 Chapter 5, Section 5.1.2 Chapter 6, Section 6.1.2 Chapter 7, Section 7.1.2 Chapter 8, Section 8.1.2 Chapter 9, Section 9.1.2 Chapter 10, Section 10.1.2 Chapter 11, Section 11.1.2 Chapter 12, Section 12.1.2 Chapter 13, Section 13.1.2 Chapter 14, Section 14.1.2 Chapter 15, Section 15.1.2 Chapter 16, Section 16.1.2 Chapter 17, Section 17.1.2 Chapter 18, Section 18.1.2 Chapter 19, Section 19.1.2
• local knowledge;	Chapter 3, Section 3.4 Chapter 4, Section 4.2
• the capacity of renewable resources that are likely to be affected by the Project to meet the needs of the present and those of the future; and	Chapter 23, Section 23.5
• the requirements of a follow-up program for the Project.	Chapter 5, Section 5.9 Chapter 6, Section 6.9 Chapter 7, Section 7.9 Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9 Chapter 13, Section 13.9

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 14, Section 14.9 Chapter 15, Section 15.9 Chapter 16, Section 16.9 Chapter 17, Section 17.9 Chapter 18, Section 18.9 Chapter 19, Section 19.9 Chapter 24, Section 24.3.2
3.3 Scope of the Factors to be Considered	
In addition to the factors listed above, the EIS shall document any additional issues or concerns that may be identified through regulatory, stakeholder, and public consultation.	Chapter 3, Sections 3.4, 3.5
The assessment of environmental effects shall focus on valued ecosystem components (VECs). A VEC is a component or attribute that is important for its ecological, legal, scientific, cultural, economic or aesthetic values. VECs for the project should be selected based on defined criteria and their selection justified. The assessment shall consider potential environmental effects that the Project may have on each VEC.	Chapters 4, Section 4.2.3
In considering VECs, the Proponent will recognize that: • the value of a component not only relates to its role in the ecosystem, but also to the value placed on it by humans; • culture and way of life of those using the area affected by the Project may also be considered as VECs; and • functional relationships within the environment may also be considered as VECs.	Chapter 4, Section 4.2.3
The EIS will define the study areas and time frames, or spatial and temporal boundaries used in the analysis of environmental effects, including cumulative effects. It is expected that the spatial and temporal boundaries shall vary between VECs to reflect the nature of both the VEC and the predicted effects.	Chapter 4, Section 4.2.4 Chapter 5, Section 5.1.3 Chapter 6, Section 6.1.3 Chapter 7, Section 7.1.3 Chapter 8, Section 8.1.3 Chapter 9, Section 9.1.3 Chapter 10, Section 10.1.3 Chapter 11, Section 11.1.3 Chapter 12, Section 12.1.3 Chapter 13, Section 13.1.3 Chapter 14, Section 14.1.3 Chapter 15, Section 15.1.3 Chapter 16, Section 16.1.3 Chapter 17, Section 17.1.3 Chapter 18, Section 18.1.3 Chapter 19, Section 19.1.3 Chapter 20, Section 20.1.2

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
Temporal and spatial boundaries reflect: • the geographic range over which the project's environmental effects may occur, recognizing that some effects shall extend beyond the project area; • timing/scheduling of project activities; • natural variations of each VEC (e.g. species ranges and/or habitat suitability); • the time required for recovery from an effect; and • cumulative effects of other projects, land use, and activities on VECs.	Chapter 4, Section 4.2.5 Chapter 5, Section 5.1.3 Chapter 6, Section 6.1.3 Chapter 7, Section 7.1.3 Chapter 8, Section 8.1.3 Chapter 9, Section 9.1.3 Chapter 10, Section 10.1.3 Chapter 11, Section 11.1.3 Chapter 12, Section 12.1.3 Chapter 13, Section 13.1.3 Chapter 14, Section 14.1.3 Chapter 15, Section 15.1.3 Chapter 16, Section 16.1.3 Chapter 17, Section 17.1.3 Chapter 18, Section 18.1.3 Chapter 19, Section 19.1.3 Chapter 20, Section 20.1.2
The VECs to be considered shall include:	Chapter 4, Section 4.2.3
• Victoria Dam and reservoir;	Chapter 19
• wildlife including caribou, avifauna, and other wildlife and their habitats (including Sensitive Wildlife Areas);	Chapter 10 Chapter 11 Chapter 12
• water bodies (surface water and groundwater including wetlands);	Chapter 6 Chapter 7 Chapter 9
• freshwater fish, fish habitat and fisheries;	Chapter 8
• landforms and soils;	Chapter 9
• atmospheric environment including Greenhouse Gases (GHG);	Chapter 5
• Species at Risk and species of conservation concern;	Chapter 8 Chapter 9 Chapter 10, Chapter 11 Chapter 12
• economy, employment and business; including outfitter businesses;	Chapter 15
• community services and infrastructure (including other downstream dams); and	Chapter 13 Chapter 19
• health and community health.	Chapter 14

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The Proponent may add other VECs. In addition, the EIS shall include a consideration of key organisms that live off or rely on bio-physical VECs during their life cycle. Rationale for the selection of the above VECs, as well as a proposed study approach, is provided in Section 4 of these guidelines and is to be presented in the EIS for all VECs. The required baseline studies in Section 4 serve to provide additional information to one or more VECs in the list above. The baseline study may or may not have the same name as the VEC depending on the nature of the additional information required. The baseline studies shall describe, in detail, study methods and analytic methods, including incorporation of information gathered through public consultation.	Baseline Study Appendix (BSA) 1 – BSA.10
4.0 PREPARATION OF THE EIS	
The EIS is a statement of the Proponent's environmental conclusions and commitments related to the Project; it be explicitly endorsed by the Proponent.	Noted
The EIS shall employ the clearest language possible. However, where the complexity of the issues addressed requires the use of technical language, a glossary defining technical words and acronyms shall be included. The Proponent shall also prepare a Plain Language Summary (PLS) to accompany the EIS. The PLS is described in Section 4.1.2 and will be used to aid public review of the conclusions of the EIS.	Noted Summary of the EIS
The EIS shall be a stand-alone document with reference to the required baseline studies upon which a critical review can be undertaken. Where external sources of information or data are used, they shall be referenced within the body of the EIS and listed completely at the end. Where conclusions that are critical to the assessment of environmental effects are cited from other reports, the EIS shall provide sufficient detail of the originating data and analysis to enable a critical review of that material and submit reference material as an appendix to the EIS.	Noted
It is recommended that the EIS be presented in the sequence outlined in these Guidelines. The EIS shall include a Table of Concordance to these Guidelines, so that information requirements identified herein can be easily located in the EIS. The EIS shall refer to, rather than repeat, information previously presented in other sections of the document. However, it is important that underlying limitations, uncertainties and assumptions of all environmental predictions, especially those that support major statements or conclusions, be described in the body of the EIS rather than simply referencing supporting studies. A key subject index is to be provided giving locations in the text by volume, section and sub-section.	Noted
The EIS shall provide charts, diagrams and maps wherever useful to clarify the text, including a depiction of how the developed Project sites will appear from both an aerial and terrestrial perspective. Where possible, maps shall use common scales to allow for comparison and overlay of mapped features and shall indicate common and accepted local place names. Where technically feasible, provide geographic information in standard Geographic Information System (GIS) mapping (digital) format. The EIS and all associated reports and required baseline studies shall use System International (SI) units of measure and terminology.	Noted
The following sections describe the different topics to be addressed in the EIS. The EIS shall provide sufficient information to allow readers to understand the potential environmental effects of the Project, as identified by the Proponent and through these guidelines.	Noted

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.1 Content of the EIS	
4.1.1 Executive Summary	
The EIS should begin with an Executive Summary, including a concordance table that describes where each information requirement of the EIS Guidelines has been addressed in the EIS.	Executive Summary
4.1.2 Plain Language Summary	
In order to enhance understanding of the EIS and facilitate consultation activities, a Plain Language Summary (PLS) of the EIS shall be prepared. The PLS will summarize the Project and the major findings and conclusions of the EIS. It shall be a stand-alone document no longer than approximately 50 pages, excluding annexes and appendices. It should clearly describe the Proponent, the Project (including rehabilitation and closure activities), and the environmental effects of the Project. Maps at appropriate sizes and scales shall be included to clearly show the location of all Project components and/or environmental components. As the name implies, the PLS should avoid unnecessary use of technical terms or jargon and be written so that an average reader with no specialist knowledge of mining or EA can comprehend the Project, the analysis of environmental effects, the conclusions reached, and the supporting rationale.	Summary of the EIS
The PLS should be organized as follows: **Introduction** • Project Overview • Environmental Assessment Process - Purpose of the EIS - Provincial EA Requirements **Project Description** • Purpose of and Need for the Project • Project Description - Location - Components - Activities - Schedule **Scope of the Assessment** • Scope of the Project • Factors to be Considered • Scope of the Factors - Identification of VECs - Spatial and Temporal Boundaries **Project Alternatives** • Alternatives to the Project • Alternative Means of Carrying out the Project - Description of Alternative Means - Environmental Effects of Alternative Means - Technical and Economic Feasibility of Alternative Means - Selection of a Preferred Alternative Means **Consultation** • Public Consultation and Engagement Activities undertaken for the EA (Proponent and Government)	Summary of the EIS

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
Existing Environment **Environmental Effects Assessment** • Method and Approach • VECs - Potential Environmental Effects - Mitigation Measures - Residual Environmental Effects • Government, Public Comments and Proponent's Response • Effects of the Environment on the Project - Method and Approach - Potential Effects - Mitigation - Residual Effects - Government and Public Comments and Proponent's Response • Effects of Possible Accidents or Malfunctions - Method and Approach - Potential Effects - Mitigation - Residual Effects - Government, Public Comments and Proponent's Response • Effects on Capacity of Renewable Resources • Cumulative Environmental Effects - Approach - Scoping - Potential Cumulative Effects - Mitigation Measures - Residual Effects - Government, Public Comments and Proponent's Response **Follow-Up Program** **Benefits of the EA to Newfoundlanders and Labradoreans** **Overall Conclusions of the Proponent**	
It is understood that the Proponent can only provide Government, Public comments and the Proponent's responses to the extent known at the time of writing, as there will be further comment periods after the EIS.	Noted
4.1.3 Project Information	
4.1.3.1 The Proponent	
The EIS shall:	
• identify the Proponent and the name of the legal entity that would develop, manage and operate the Project;	Chapter 1, Section 1.2
• provide contact information for the Proponent (e.g., name, address, telephone, facsimile, e-mail);	Chapter 1, Section 1.2.1
• explain corporate and management structures, as well as insurance and liability management related to the Project;	Chapter 1, Section 1.2.2
• explain corporate environmental and community relations policies;	Chapter 1, Section 1.2.2

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• specify how the Proponent would ensure that corporate policies are implemented and respected for the Project;	Chapter 1, Section 1.2.2
• summarize key elements of its environmental management system and how it would be integrated into the Project; and	Chapter 1, Section 1.2.2
• identify key personnel and consultants responsible for preparing the EIS. The qualifications of all contracted scientific experts, including biologists conducting surveys for migratory birds, species at risk and species of conservation concern and wetland delineations should be provided in an appendix to the EIS.	Chapter 1, Sections 1.2.1, 1.2.2 Appendix 1D
4.1.3.2 Project Overview	
The EIS shall briefly summarize the development proposal. If the Project is a component of a larger operation, the EIS shall outline the larger context and present the relevant references, if available. The Project location should be described in the context of surrounding land uses and infrastructure. The intent of this overview is to provide the key components and the location of the Project, rather than a detailed description, which shall follow as described in Section 4.1.4 of this document.	Chapter 2, throughout
4.1.3.3 Regulatory Framework and the Role of Government	
The EIS should identify the EA process and the government bodies involved in the assessment. It should also describe the process used to determine the requirement for the provincial EA.	Chapter 1, Section 1.4
In addition, the EIS shall:	
• identify the environmental regulatory approvals and legislation that are applicable to the Project at federal, provincial and municipal levels, including: - activities requiring regulatory approval; - names of permits or regulatory approvals; - names of legislation applicable in each case; and - names of the regulatory agencies responsible for each permit or approval;	Chapter 1, Section 1.4
• identify environmental government policies, resource management, planning or study initiatives pertinent to the Project and discuss their implications;	Chapter 1, Section 1.4
• identify any relevant Land Use Plans, Land Zoning and/or Community Plans;	Chapter 1, Section 1.3.2 Chapter 16, Section 16.2.2
• describe land tenure in and adjacent to the Project area;	Chapter 1, Section 1.3.2
• identify and delineate major components of the Project and identify those being applied for and constructed within the jurisdiction of these approvals processes under provincial legislation; and	Chapter 1, Section 1.4
• provide a summary of the regional, provincial and/or national objectives, standards or guidelines that have been used by the Proponent to assist in the evaluation of any predicted environmental effects.	Chapter 1, Section 1.4
4.1.3.4 Non-Government Participants in the Environmental Assessment	
The EIS shall identify the main participants in the EA including community groups and environmental organizations.	Chapter 1, Section 1.4.4 Chapter 3, Section 3.4, 3.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.1.3.5 Other Registrations	
The Proponent shall indicate whether any other registrations have previously been submitted in relation to this Project, or are to be submitted for EA in the future as a result of this Project.	Chapter 1, Section 1.4.5
4.1.4 Project Description	
4.1.4.1 Purpose of and Need for the Project	
The EIS shall state the purpose of the Project, from the Proponent's perspective and clearly describe the need for the Project (i.e., the problem or opportunity the Project is intended to solve or satisfy). This is the fundamental rationale for the Project and provides the context for the consideration of alternatives to the Project.	Chapter 2, Section 2.9
The statement of the Project's justification shall be presented in economic terms, shall provide a clear description of methods, assumptions and conclusions used in the analysis and shall include an evaluation of the following: • current and forecasted gold demand; • market opportunities, forecasts and expected evolution; • risks to the Project, including market prices and schedule delays, interest rates and other risk factors relevant to the decision to proceed with the Project; and • projected financial costs and benefits at the regional, provincial and national levels.	Chapter 2, Section 2.9
4.1.4.2 Alternatives to the Project	
The EIS shall include an analysis of alternatives to the Project; describing functionally different ways to meet the Project's need and purpose.	Chapter 2, Sections 2.10, 2.11
The EIS shall:	
identify the alternatives to the Project that were considered;	Chapter 2, Sections 2.10, 2.11
develop criteria to identify the major environmental, economic and technical costs and benefits of the alternatives; and	Chapter 2, Sections 2.10, 2.11
identify the preferred alternatives to the Project based on the relative consideration of the environmental, economic and technical costs and benefits	Chapter 2, Sections 2.10, 2.11
The level of detail for this analysis shall be sufficient to allow the reader to understand the alternatives and how they compare to the Project. The analysis of alternatives to the Project is to provide clearly described methods and criteria for comparing alternatives and sufficient information for the reader to understand the reasons for selecting the preferred alternative and for rejecting others. This analysis shall include a description of the conditions or circumstances that could affect or alter these choices, such as market conditions, regulatory changes and other factors, either prior to construction or during the life of the Project.	Chapter 2, Sections 2.10, 2.11
The EIS shall include a comparative analysis of the environmental effects and technical and economic feasibility of alternatives that led to the choice of the selected Project alternative. The EIS shall demonstrate how the preferred alternative contributes to sustainable development. The Proponent shall include an evaluation of the thresholds for economic viability of the Project and considerations respecting the timing of phases and components of the Project.	Chapter 2, Sections 2.10, 2.11

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.1.4.3 Project Location	
The EIS shall provide a concise description of the geographic setting in which the Project shall take place. The description shall focus on aspects of the environment that are important for understanding the potential environmental effects of the Project, including:	
• any existing, designated or planned environmentally sensitive or significant areas; national, provincial and regional parks; protected natural areas and watersheds; ecological reserves; impacted watersheds from the project; watersheds, sub-watersheds, waterbodies, and wetlands directly impacted by the project footprint; riverine and lacustrine fish habitats; mature and interior forest habitat for migratory birds; habitats of designated species at risk, including critical habitat for the designated species; areas of concentration of other wildlife; and other sensitive areas and habitat;	Chapter 1, 1.3 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12. Section 12.2
• the current land use in the area and the relationship of the Project facilities and components with any existing or future land use including private and crown lands; and	Chapter 1, Section 1.3 Chapter 16, Section 16.2
• description of the nearest potentially sensitive human receptors (e.g. residences, cabins, outfitters, etc.) and of local communities that may be affected by project activities.	Chapter 1, Section 1.3 Chapter 5, Section 5.2 Chapter 16, Section 16.2
The location of the mine site, power transmission lines, transportation corridors, and watersheds shall be described and clearly indicated on maps of appropriate scale. The location map should include the boundaries of the proposed site and transportation corridors, any existing infrastructure, adjacent land uses and important environmental features. In addition, site plans/sketches and photographs showing project location, site features and the intended locations of project components should be included.	Chapter 2, throughout
4.1.4.4 Project Description	
4.1.4.4.1 Facilities and Components	
The EIS shall describe all of the Project's facilities and components in detail, focusing on those with the most potential for environmental interactions and risk (e.g., Project "footprint" wastes and emissions and associated zones of influence). The EIS shall present descriptions, locations, plans, figures and/or drawings for each facility, as appropriate, to convey information on potential environmental interactions, including:	
• waste rock storage (including discussion of ore contaminants that may affect processing and volume of waste rock) including a description of any water bodies (streams, wetlands, etc.) within the footprint and whether they are waters frequented by fish or have any connectivity to waters frequented by fish;	Chapter 2, Section 2.3.2 Chapter 6, Section 6.2.2 Chapter 7, Section 7.2.2 Chapter 8, Section 8.2.2 Chapter 9, Section 9.2.2
• overburden storage areas including a description of any water bodies (streams, wetlands, etc.) within the footprint and whether they are waters frequented by fish or have any connectivity to waters frequented by fish;	Chapter 2, Section 2.3.2 Chapter 6, Section 6.2.2 Chapter 7, Section 7.2.2 Chapter 8, Section 8.2.2 Chapter 9, Section 9.2.2

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• tailings management area and associated dams (the tailings and polishing pond dams) shall be classified, designed, operated and closed out according to the Canadian Dam Association (CDA), Dam Safety Guidelines, including the CDA Technical Bulletin: Application of Dam Safety Guidelines to Mining Dams. Dam break inundation modeling and mapping (including examination of a cascade failure of the Victoria Dam and other downstream dams) and a determination of whether the tailings are acid generating or not will be needed in order to help determine the dam consequence classification. Depending on the dam consequence classification this may entail requirements for dam safety reviews; an operation, maintenance and surveillance manual; and an emergency preparedness and response plan.). This shall include a description of any water bodies (streams, wetlands, etc.) within the footprint and whether they are waters frequented by fish or have any connectivity to waters frequented by fish;	Chapter 2, Section 2.3.4 Chapter 6, Section 6.2.2 Chapter 7, Section 7.2.2 Chapter 8, Section 8.2.2 Chapter 9, Section 9.2.2 Chapter 19, Section 19.5 Chapter 21, Section 21.5.1
• processing facility;	Chapter 2, Section 2.3.3
• heap leach facility;	Chapter 2, Section 2.1
• all effluent generation, treatment systems, handling and discharge locations, as well as all anticipated effluents and contaminants, including ammonia residue from blasting operations;	Chapter 2, Sections 2.7, 2.3.12, 2.3.13
• air emission sources including dust lift-off (e.g., diesel generators, heavy equipment, roads, waste rock, crushing, grinding, process heaters, dryers, blasting, roads, pits, laydown areas, stockpiles, waste rock storage, parking lots, etc.);	Chapter 2, Section 2.7.5
• ambient air sampling stations and their locations;	Chapter 5, Section 5.2.2.2 BSA.6
• noise sources, expected noise levels and noise monitoring locations;	Chapter 2, Section 2.7.5.3 Chapter 5, Section 5.2.2.5 BSA.6
• water control structures or diversions that may be required to facilitate the project;	Chapter 2, Section 2.3.5
• all utility installations, including transmission lines and generators;	Chapter 2, Sections 2.3.8, 2.4.8
• all infrastructure construction, including haulage roads and ancillary structures;	Chapter 2, Sections 2.3, 2.4
• fuel and chemical storage systems, including secondary containment (dykes and double piping) and a list of fuels and chemicals to be stored;	Chapter 2, Sections 2.3.12, 2.3.13
• any quarries that are contemplated as part of the Project;	Not Applicable
• sources of lighting emissions associated with the project;	Chapter 5, Section 5.5.4 BSA.6
• explosive storage facilities;	Chapter 2, Section 2.3.12
• worker accommodations and related facilities;	Chapter 2, Section 2.3.11
• viewscapes that could be affected by the Project; and	Chapter 5, Section 5.5.4 Chapter 16, Section 5.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• water quality sampling locations and real time water monitoring station locations in the watersheds potentially affected by the project. This will ensure baseline data prior to start of the project.	Chapter 6, Section 6.2 Chapter 7, Section 7.2 BSA.3
4.1.4.4.2 Activities	
The EIS shall include descriptions of the construction, operation, maintenance, foreseeable modifications, including the expansion and lengthening of the operations and, where relevant, rehabilitation and closure of sites and facilities associated with the Project. Detailed descriptions of activities to be carried out during each phase of the Project should include the location, magnitude and scale of each activity, including labour force requirements. A schedule shall be provided, showing time of year, frequency and duration of project activities.	Chapter 2, throughout
The description of the construction and operation activities shall include:	Chapter 2, Section 2.2
• estimates of emission quantities (use units of t/yr and mg/m3);	Chapter 2, Sections 2.2, 2.7.4
• solid waste, hazardous waste and waste reduction strategies;	Chapter 2, Section 2.7
• spill potentials and prevention strategies (e.g., hydraulic hose ruptures, fueling mishaps, tank failure, failure of heap leach pad liner system, fuel and chemical transmission piping failure, etc.);	Chapter 2, Sections 2.3.12, 2.3.13, 2.7.4
• long-term operation, maintenance and surveillance of the tailings management area (including the closure phase);	Chapter 2, Section 2.6
• long-term operation, maintenance, rehabilitation, closure and surveillance of the heap leach pile; and	Chapter 2, Section 2.1
• rehabilitation strategy for open pits, waste rock, overburden storage or other areas.	Chapter 2, Section 2.6
Operation activities shall make use of best available control technology and utilize best practices in the industry. The proponent shall demonstrate how the Heap Leach process of extracting gold from low-grade ore meets these criteria (best available technology and best practices).	Chapter 2, Section 2.1
The EIS shall describe proposed means to treat waste resulting from the Project and/or the capacity of contractors to do so.	Chapter 2, Section 2.7.4.4
The EIS shall describe any regular inspection and maintenance that may be required for the open pit mine, any underground workings, associated facilities and infrastructure. Activities involving periods of increased environmental disturbance or the release of materials into the environment are to be highlighted.	Chapter 2, Section 2.7
The level of detail in the description of the Project's facilities and activities shall be sufficient to enable prediction of environmental effects.	Chapter 2, Section 2.2
4.1.4.4.3 Labour Force Requirements	
The EIS shall include descriptions of the construction, operations, rehabilitation and closure labour force requirements, including:	
• National Occupation Classification (NOC 2011) codes at the 4-digit level associated with each position for construction and operations phases of the project (including the number of positions associated with each NOC code);	Chapter 2, Sections 2.4.9, 2.5.9 Chapter 15, Sections 15.4, 15.5 and 15.9

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• A commitment to develop a Gender Equity and Diversity Plan (GEDP) to improve employment and training opportunities for women and other underrepresented groups. The Plan's main components should include a women's employment plan, a diversity plan for other underrepresented groups (i.e. people with disabilities, Indigenous people and visible minorities) and a business access strategy for these target populations;	Chapter 2, Section 2.7.3 Chapter 15, Section 15.4
• The approximate time lines for each of the positions during the construction phase of the project. This would include the number of positions for each 4-digit NOC 2011 code throughout the project at specified time intervals (monthly or at least quarterly) which would show levels of employment throughout the project timeline;	Chapter 15, Section 15.5.1
• An indication of whether the positions are full-time equivalent or if they are the actual number of positions; if they are indeed the actual number of positions, how many are full-time vs. part-time;	Chapter 15, Section 15.5.1
• An estimate of the number of apprentices (by level and trade/4-digit NOC code) and journeypersons required;	Chapter 15, Section 15.5.2 BSA
• Qualifications, certifications and other requirements, including the need for, location and availability of related training opportunities (e.g., post-journeyperson training) associated with key positions for all phases of the project;	Chapter 15, Section 15.5.2 BSA.9
• The anticipated source of the workforce, including an estimate of local employment (local area, provincial) and any strategies for recruitment. This should also include clarification on which positions would be direct hires, and which would be from companies contracted to carry out project work; and	BSA.9
• A commitment to provide quarterly summary reports for each phase of the project. These reports would include information on the number employed by 4-digit NOC, the number of full-time/part-time employees, the number of apprentices (by level) and journeypersons for each applicable 4-digit NOC code, gender and source of the workforce.	Chapter 15, Section 15.4
4.1.4.5 Alternative Means of Carrying out the Project	
The EIS shall identify and describe alternative means of carrying out the Project or components of the Project, and assess their technical and economic feasibility. The analysis shall describe: • the alternative means considered, an assessment of their technical and economic feasibility, and the rationale for rejecting alternatives; • a description of the conditions or circumstances that could affect or alter these choices, such as market conditions, regulatory changes and other factors, either prior to construction or during the life of the Project; • the environmental effects of the alternatives, in sufficient detail to allow comparison with the effects of the Project; • the costs associated with failure of key components of the Project including failure of the tailings management area and heap leach process (to inform the viability of the alternate means), and; • the preferred means of carrying out the Project or its components based on the relative consideration of environmental effects including the criteria and rationale for their selection.	Chapter 2, Sections 2.10, 2.11

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS shall analyze and compare the design alternatives for the Project in relation to their environmental and social costs and benefits, including those alternative means that cost more to build and/or operate but which result in reduced adverse environmental effects or more durable social and economic benefits.	Chapter 2, Sections 2.10, 2.11
At a minimum, the discussion of alternative means of carrying out the Project shall include: • waste rock storage management and location; • location of the tailings management area; • all options for methods of tailings disposal, including dry stacking and in-pit disposal; • specifications, design, operation, closure and post-closure monitoring of the engineered tailings management facility (TMF); • overburden storage and management; • specifications, design, operation, closure and post-closure monitoring of the heap leach processing facility; • all options for the processing of ore, including not requiring the use of heap leach in the gold extraction process; • pit dewatering options; • contracting or lengthening of the operations; • labour supply; • working conditions, including shift and rotation lengths; • mining methods; and • reclamation methods.	Chapter 2, Sections 2.10, 2.11
Mapping indicates there are water bodies within the proposed project footprint. If those water bodies are frequented by fish then those water bodies may need to be added to Schedule 2 of the Metal and Diamond Mining Effluent Regulations under the federal *Fisheries Act*. Environment and Climate Change Canada (ECCC) will require a detailed assessment of alternatives before considering the addition of the waterbodies to Schedule 2. A copy of the ECCC Guidelines for Alternatives Assessment is attached as an Appendix. Compliance with the ECCC Guidelines is required if the project intends to use waters frequented by fish or waters that may enter waters frequented by fish for the purpose of tailings disposal or other infilling.	Chapter 2, Section 2.11.1.3 Chapter 8, Section 8.5
4.1.5 Description of the Existing Environment	
The EIS shall provide a description of the biophysical and socio-economic environments that could be affected by the Project, both in the immediate vicinity and beyond. This shall include the components of the existing environment and environmental processes, their interrelations and interactions, as well as their variability over time scales appropriate to the effects analysis. The level of detail shall be sufficient to:	
• identify and assess any adverse environmental effects that may be caused by the Project;	Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 12, Section 12.5 Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5
• identify and characterize the beneficial effects of the Project; and	Chapter 2, Section 2.9.4
• provide the data necessary to enable effective follow-up.	Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2 Chapter 13, Section 13.2 Chapter 14, Section 14.2 Chapter 15, Section 15.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 Chapter 18, Section 18.2 Chapter 19, Section 19.2 BSA.1 to BSA.10
A description of the existing environment shall be developed for the following environmental components and VECs for each environmental component shall be described: • atmospheric environment; • geology (bedrock and surficial), geomorphology and geochemistry; • bodies of water (wetlands, streams, etc.) including water quality and quantity; • topography; • hydro dams including the Victoria Lake reservoir and Victoria Lake dam, dykes and canal; • land and resource use; • Species at Risk and species of conservation concern; • caribou habitat and migratory behaviour; • fish and fish habitat; • avifauna (migratory and non-migratory), other wildlife birds and their habitats (including Sensitive Wildlife Areas); • heritage resources; • tourism and outfitting resources (operators, assets, viewscapes, etc.); • communities; • community services and infrastructure; and	Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2 Chapter 13, Section 13.2 Chapter 14, Section 14.2 Chapter 15, Section 15.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 Chapter 18, Section 18.2 Chapter 19, Section 19.2

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• population health status including but not limited to: - demographics; - rates of chronic disease (e.g. cancer, heart disease, chronic pain, and others); - rates of communicable disease (e.g. hepatitis, sexually transmitted infections, influenza, enteric illness, and others); - healthy living indicators; - rates of disability; - mental health status; - rates of substance use; - rates of domestic violence and crime; and - economy, employment, household incomes, and business.	
The baseline description shall characterize environmental conditions resulting from historic and present activities in the local and regional study area. The physical and biological environments shall be described based on an ecosystem approach that considers scientific knowledge and perspectives regarding ecosystem health. The EIS shall identify and justify the selected indicators and measures of ecosystem health (i.e., measurable parameters). These indicators should be transferable to future project monitoring and other follow-up.	Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2
In assessing effects to the biological environment, the EIS shall consider the resilience of relevant species populations, communities and their habitats. It shall summarize all pertinent historical information on the size and geographic extent (i.e. ranges) of relevant animal or floral populations as well as density, based on best available information. Where little or no information is available, and when appropriate, specific studies shall be designed to gather information on species populations and densities that could be adversely affected by the Project. Habitat at regional and local scales shall be defined when mapping aquatic and terrestrial vegetation types and/or communities.	Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2
Habitat use at regional and local scales should be characterized by type of use (e.g., spawning, breeding, migration, feeding, nursery, rearing, wintering), frequency and duration. Emphasis shall be on those species, communities and processes most sensitive to project effects. However, the interrelations of these components to the greater ecosystem and communities of which they are a part shall be indicated. The EIS shall address issues such as habitat, migratory behavior, nutrient and chemical cycles, food chains and productivity, to the extent that they are appropriate to understanding the effects of the Project. Range and probability of natural variation over time shall also be considered.	Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 11.2 Chapter 12, Section 12.2
The EIS shall provide a description of the communities likely to be affected by the Project, including demographic, economic, social and community health information. If the information available from government or other agencies is insufficient or no longer representative, the Proponent shall complete the description of the environment with current surveys and studies. The Proponent shall outline how the potential negative impacts of the “boomtown effect” on neighbouring communities may be mitigated.	Chapter 1, Section 1.3 Chapter 3, Section 3.4 Chapter 13, Sections 13.2, 13.5 Chapter 14, Sections 14.2, 14.5 Chapter 15, Sections 15.2, 15.5 Chapter 16, Section 16.2, 16.5 Chapter 17, Section 17.2 Section 17.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS shall indicate the Project's proximity to sensitive features such as dams, residences, cabins, outfitters, tourism assets and operators, and locations of hunting and gathering activities (i.e., country foods collection). Depending on the type of potential effects the Project may have on these receptors, appropriate baseline evaluation should be undertaken (e.g., seismic loading, hydrometric loading, baseline noise, current levels of access. surface soil, air quality, drinking water, groundwater resources (including any private water supply wells), etc.).	Chapter 5, Section 5.2 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 16, Section 16.2 Chapter 17, Section 17.2 BSA.3 BSA.6 BAS.9
The EIS shall also describe existing geology, geochemistry, geomorphology, soils and terrain at the project site and in the immediate vicinity.	Chapter 9, Section 9.2
The EIS shall explain any extrapolation, interpolation or other manipulation applied to the baseline data used to describe environmental conditions in the study area. Any information gaps from a lack of previous research or practice shall be described indicating information that is not available or existing data that cannot accurately represent environmental conditions in the study area over four seasons. If data gaps remain, the Proponent shall describe its efforts to resolve the data gaps, including any direct consultation with groups, individuals and others.	Noted
4.1.6 Environmental Effects and Assessment	
The EIS shall contain a comprehensive analysis of the Project's predicted effects on the environment, including cumulative effects that are likely to result from the Project in combination with other projects or activities that have been or will be carried out.	Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5 Chapter 21, throughout
The assessment shall include, but not be limited to, the effect of any environmental change on health and socio-economic conditions. Potential effects from all components of the Project at the site and within the Project's zone of influence shall be discussed.	Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS shall predict the Project's effects during all project phases (e.g., construction, operation, maintenance, foreseeable modifications, closure, decommissioning and reclamation) and describe them using appropriate criteria.	Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5
The environmental effects assessment in the EIS shall be based on best available information and methods. The methods employed shall be clearly explained. All conclusions shall be substantiated and the supporting logic clearly traceable. The Proponent is encouraged to make use of existing information relevant to the project.	Chapter 4, throughout Chapter 5, Sections 5.3, 5.5 Chapter 6, Sections 6.3, 6.5 Chapter 7, Sections 7.3, 7.5 Chapter 8, Sections 8.3, 8.5 Chapter 9, Sections 9.3, 9.5 Chapter 10, Sections 10.3, 10.5 Chapter 11, Sections 11.3, 11.5 Chapter 12, Sections 12.3, 12.5 Chapter 13, Sections 13.3, 13.5 Chapter 14, Sections 14.3, 14.5 Chapter 15, Sections 15.3, 15.5 Chapter 16, Sections 16.3, 16.5 Chapter 17, Sections 17.3, 17.5 Chapter 18, Sections 17.3, 18.5 Chapter 19, Sections 19.3, 19.5
When relying on existing information to meet the requirements of various sections of the EIS Guidelines, the Proponent shall include the information directly in the EIS or clearly direct (e.g., through cross-referencing) the reader to where they may obtain the information. With respect to pre-existing baseline studies, the Proponent will append these to the EIS as distinct appendices.	Throughout Baseline Study Appendices
When relying on existing information, the Proponent shall also comment on how the data have been applied to the project, clearly separate factual lines of evidence from inference and state any limitations on the inferences or conclusions that can be drawn from them according to the criteria for information quality set out in the EIS Guidelines. For instance: • assumptions should be clearly identified and justified;	Chapter 5, Section 5.3.5 Chapter 6, Section 6.3.5 Chapter 7, Section 7.3.5 Chapter 8, Section 8.3.5 Chapter 9, Section 9.3.5 Chapter 10, Section 10.3.5 Chapter 11, Section 11.3.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• all data, models and studies shall be documented such that the analyses are transparent and reproducible; • the uncertainty, reliability and sensitivity of models used to reach conclusions shall be indicated; • conclusions should be substantiated; and, • the studies should be prepared using best available information and methods.	Chapter 12, Section 12.3.5
Modeling methods and equations presented shall include information on margins of error and other relevant statistical information (e.g., confidence intervals, possible sources of error, etc.).	Noted
The Proponent shall prepare a table describing the proposed Project's anticipated effects, which shall enable the reader to review and consider those effects.	Chapter 5, Section 5.3 Chapter 6, Section 6.3 Chapter 7, Section 7.3 Chapter 8, Section 8.3 Chapter 9, Section 9.3 Chapter 10. Section 10.3 Chapter 11, Section 11.3 Chapter 12, Section 12.3 Chapter 13, Section 13.3 Chapter 14, Section 14.3 Chapter 15, Section 15.3 Chapter 16, Section 16.3 Chapter 17, Section 17.3 Chapter 18, Section 18.3 Chapter 19, Section 19.3
Views of the public relative to the EA, including any perceived changes in the environment from the Project, shall be acknowledged and considered. The EIS shall clearly articulate how relevant issues raised by the public have been considered, including any changes to the Project, or mitigation or follow-up measures arising from such consideration.	Chapter 3, Sections 3.3 to 3.5
4.1.6.1 Predicted Future Condition of the Environment if the Undertaking Does Not Proceed	
The EIS shall describe the predicted future condition of the environment with respect to the key issues, if the project does not proceed. The predicted future condition of the environment shall help to distinguish project-related effects from environmental change due to natural processes.	Chapter 5, Section 5.8 Chapter 6, Section 6.8 Chapter 7, Section 7.8 Chapter 8, Section 8.8 Chapter 9, Section 9.8 Chapter 10, Section 10.8 Chapter 11, Section 11.8 Chapter 12, Section 12.8 Chapter 13, Section 13.8 Chapter 14, Section 14.8 Chapter 15, Section 15.8 Chapter 16, Section 16.8

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 17, Section 17.8 Chapter 18, Section 18.8 Chapter 19, Section 19.8
4.1.6.2 Accidents and Malfunctions	
The EIS shall identify and describe accidents and malfunctions that may occur as a result of project activities, including: • an explanation of how those events were identified, potential consequences (including potential environmental effects); • a quantitative analysis of the risks of accidents and malfunctions across all phases of the Project; and • the plausible worst case scenarios and the effects of these scenarios and associated environmental effects.	Chapter 21, throughout
The EIS should identify potential accidents, malfunctions, unplanned events (e.g., premature or permanent shutdown), or emergency situations that could be associated with all phases of the Project, including: • product spills, • fires, • floods, • potential impacts on hydro dams, including the Victoria Dam (seismic loading effects from blasting, effects of a tailings dam failure), • fuel transportation and storage, • resource road conflicts with wildlife and other users as well as the probabilities and hazards associated with them, and • the preventive measures and design safeguards that have been established to protect against such occurrences and the contingency/emergency response procedures in place in the event that an accident/malfunction occurs.	Chapter 21, Section 21.4
Factors which contribute to the uncertainty of detecting and mitigating effects associated with accidents and malfunctions shall be assessed.	Chapter 21, Sections 21.5, 21.6
The proponent should conduct a quantitative analysis of the risks of accidents and malfunctions across all phases of the Project, determine their effects, and present preliminary emergency response measures and associated capacities.	Chapter 21, Section 21.5
Taking into account the lifespan of different project components, the proponent will identify the probability of potential accidents and malfunctions related to the project, including an explanation of how those events were identified, potential consequences, the plausible worst case scenarios and the effects of these scenarios. Fate and behaviour modelling of potential spills of hazardous materials, including hydrocarbons and sodium cyanide, to waters frequented by fish should be considered for all seasons.	Chapter 21, Section 21.5 Appendix 21A
The EIS will describe the preventive measures and design safeguards that have been established to protect against such occurrences and the contingency and emergency response procedures that would be put in place if such events do occur. Environmental sensitivity mapping, including likely pathways, will identify areas sensitive to accident and malfunction scenarios that are located adjacent to project activities, including streams and wetland areas frequented by fish and/or by migratory birds.	Chapter 21, Sections 21.3, 21.5 Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 8, Section 8.2 Chapter 9, Section 9.2 Chapter 10, Section 10.2 Chapter 11, Section 10.2 Chapter 12, Section 12.2

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.1.6.3 Capacity of Renewable Resources	
The EIS shall consider the capacity of renewable resources that are likely to be affected by the Project to meet the needs of the present and those of the future. The EIS shall identify any VECs predicted to experience adverse residual environmental effects, describe how the Project could affect their sustainable use and describe the criteria used in the analysis.	Chapter 23, Section 23.5
4.1.7 Avoidance and Mitigation Measures	
Mitigation is the elimination, reduction or control of the adverse environmental effects of the Project. It includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.	Noted
The EIS shall consider measures that would mitigate adverse environmental effects of the Project. Such measures should also be assessed for their technical and economic feasibility. The approach to mitigation shall be premised on a preference for avoidance and reduction of effects at their source, including modifying the Project design or its components as well as relocation of certain components, and assess their technical and economic feasibility.	Chapter 2, Section 2.7.4 Chapter 4, Section 4.5 Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 21, Section 21.5 Chapter 22, Section 22.3 Chapter 23, Section 23.3
The EIS shall describe the standard mitigation practices, policies and commitments and the mitigation measures and that will be applied. The Proponent, where possible, should refer to similar situations where the proposed mitigation has proven to be successful. Mitigation failure should be discussed with respect to risk and severity of consequence.	Chapter 2, Section 2.7.4 Chapter 4, Section 4.5 Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
	Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 21, Section 21.5 Chapter 22, Section 22.3 Chapter 23, Section 23.
The EIS shall describe the Proponent's Environmental Protection Plan (EPP) which shall provide an overall perspective on how potentially adverse effects would be minimized and managed over time.	Chapter 2, Section 2.7.2, Table 2.21
The Proponent shall describe its commitments, policies and arrangements directed at promoting beneficial or mitigating adverse socioeconomic effects and explain how it will ensure compliance among its contractors and sub-contractors and how compliance will be audited and enforced.	Chapter 2, Section 2.7 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4
The EIS shall specify the actions, works, minimal disturbance footprint techniques, best available technology, monitoring and surveillance, corrective measures or additions planned during the Project's phases (construction, operation, modification, decommissioning, abandonment or other undertaking related to the Project) to eliminate or reduce the magnitude of adverse effects.	Chapter 2, Section 2.5
EIS shall also present an assessment of the effectiveness of the mitigation measures. The Proponent shall discuss the application of the Precautionary Principle in the identification of mitigation measures. The Precautionary Principle is defined in Section 1.2.3.	Chapter 2, Section 2.7.1 Chapter 4, Section 4.1 Chapter 5, Section 5.9 Chapter 6, Section 6.9 Chapter 7, Section 7.9 Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9 Chapter 13, Section 13.9 Chapter 14, Section 14.9 Chapter 15, Section 15.9 Chapter 16, Section 16.9 Chapter 17, Section 17.9 Chapter 18, Section 18.9 Chapter 19, Section 19.9
If there are mitigation measures that were considered and rejected, the EIS shall discuss these and explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation shall be justified. The Proponent shall identify who is responsible for the implementation of these measures and the system of accountability.	Noted

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
Should the Project be released, the Proponent shall ensure that measures are taken to avoid or lessen any potential adverse effects on listed or designated species, their critical habitat or the residences of individuals of those species. Potential effects shall be monitored and mitigation shall be consistent with any applicable recovery strategy and action plans. The EIS shall include information that will allow the Province to meet this requirement.	Noted Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9
In addition, the EIS shall identify the extent to which technology innovations will help mitigate environmental effects. Where possible, it shall provide detailed information on the nature of these measures, their implementation and management, as well as whether follow-up will be required.	Noted
4.1.7.1 Acid Rock Drainage and Metal Leaching	
If there is a potential for ARD/ML to occur, the proponent's ARD/ML program report investigation shall include the following: • the design of the ARD/ML program and, if a phased program, the chronology of ARD/ML investigations (include all mineralogy, elemental analysis, static and kinetic test work conducted to date); • determination of the distribution of sample test results for each lithological/alteration/waste management unit. The assessment should account for vertical and horizontal distribution, as well as sampling biases, to permit proper characterization of the unit including the units range of variability; • the rationale, advantages and disadvantages including a description, for all test work; • predictions of the ARD/ML potential of all material management units (ore, waste rock, overburden, quarry materials and tailings) to be disturbed or created during all phases (construction, operation, decommissioning, reclamation and post-closure) of the proposed project. This shall include an interpretation of the results, an estimation of risk for the onset of ARD for each lithological/alteration/waste management unit and the predicted drainage chemistry for each unit (including the types and concentrations of major trace elements); and • clear, concise cross-sections which relate the ARD/ML assessment (static/kinetic sample locations and results), geology, and Project development plans.	BSA 5, Appendix 5-A and 5-B
4.1.8 Cumulative Effects Assessment	
The EIS shall include an analysis of cumulative effects of the Project in combination with other projects or activities that have been or will be carried out. An effective cumulative effects assessment will take into account the aggregate effect of the Project in the context of other foreseeable developments and activities.	Chapter 20 (throughout)
The analysis of cumulative effects shall consider different types of effects (e.g., synergistic, additive, induced, spatial or temporal) and identify impact pathways and trends. The EIS shall assess any residual cumulative environmental effects that remain after mitigation has been implemented.	Chapter 20 (throughout)

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS shall:	
• identify and justify the VECs that will constitute the focus of the cumulative effects assessment. For greater certainty, cumulative effects shall be assessed in relation to each VEC for which a residual effect of the Project is predicted to be adverse and likely. The assessment should examine the likelihood, nature and extent of the predicted cumulative effects of the Project in combination with other projects and activities that have been or will be carried out. It may be appropriate, during the course of the EA, to refine the definition of VECs selected for cumulative effects assessment;	Chapter 20, Sections 20.2 to 20.16
• present a justification for the spatial and temporal boundaries of the cumulative effects assessment. The boundaries for the cumulative effects assessment will depend on the VECs being considered (e.g., will generally be different for different VECs). The boundaries for the cumulative effects assessment will also generally be different from (larger than) the boundaries for assessing effects of the Project;	Chapter 20, Section 20.1.2
• describe and justify the choice of activities for the cumulative effects assessment. These shall include past activities and projects, those being carried out and future projects or activities likely to be carried out;	Chapter 20, 20.1
• describe the cumulative effects on neighbouring communities and/or other large development projects in other regions of the province with regards to community services, and health and social impacts;	Chapter 20, Sections 20.10 to 20.15
• describe the mitigation measures and assess their technical and economic feasibility; and assess the effectiveness of the measures applied to mitigate the cumulative effects. In cases where measures exist that are beyond the scope of the Proponent's responsibility that could be effectively applied to mitigate these effects, the Proponent shall identify these effects and the parties that have the authority to act. In such cases, the Proponent shall summarize the discussions that took place with the other parties in order to implement the necessary measures over the long term.	Chapter 2, Section 2.7.4 Chapter 4, Section 4.5 Chapter 5, Section 5.4 Chapter 6, Section 6.4 Chapter 7, Section 7.4 Chapter 8, Section 8.4 Chapter 9, Section 9.4 Chapter 10, Section 10.4 Chapter 11, Section 11.4 Chapter 12, Section 12.4 Chapter 13, Section 13.4 Chapter 14, Section 14.4 Chapter 15, Section 15.4 Chapter 16, Section 16.4 Chapter 17, Section 17.4 Chapter 18, Section 18.4 Chapter 19, Section 19.4 Chapter 21, Section 21.5 Chapter 22, Section 22.3 Chapter 23, Section 23.

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• Other projects and activities (e.g., hydro development, transmission lines, road development, tourism, outfitters, etc.) should be considered in assessing cumulative effects to VECs. Notably, the cumulative effects assessment should be focused on key VECs and their potential stressors, rather than on providing detailed descriptions of other projects.	Chapter 20, throughout
• The methods used to scope and assess cumulative effects should be clearly described in the EIS, demonstrating how conclusions have been reached.	Chapter 20, Section 20.1
4.1.9 Effects of the Environment on the Project	
In addition to describing environmental effects on the environment as a result of the undertaking, the EIS should also describe the climatic conditions at the project site and in local and regional study areas and provide a description of seasonal variations and trends in climatic conditions, to allow the assessment of effects on the Project. Any use of off-site data shall be described and an analysis of its degree of representativeness for Project conditions shall be included. The use of the data should be qualified with an understanding of local and regional variability and the geographic locations of any onsite and offsite meteorological stations. The geographic locations of any onsite and offsite meteorological stations shall be provided. Climate data should also be provided and taken into account when evaluating effects of the project on air quality, hydrology, hydrogeology, and water management. The influence of local and regional topography or other features that could affect conditions in the study area should also be considered, as appropriate.	Chapter 5, 5.2 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 22 BSA 3 BSA 6
Specifically, the EIS shall include a description of the following components:	
• Physiography: topography, drainage network;	Chapter 6, Section 6.2 Chapter 7, Section 7.2 Chapter 9, Section 9.2
• Climate: historical records of total precipitation (rain and snow), mean, maximum and minimum temperatures;	Chapter 5, Section 5.2.2.1
• Geological context: bedrock and surficial cover stratigraphy and composition, geotechnical properties and structural geology features such as fractures and faults in the mine area and where major project infrastructures and earthworks are proposed (e.g., open pits, heap leaching facility, TMF, etc.);	Chapter 6, Section 6.2 Chapter 9, Section 9.2
• Hydrogeological context: hydrogeological characteristics of the different geological units (hydraulic conductivities, porosity, storage coefficients); groundwater geochemistry and groundwater levels for the areas that are adjacent to, and/or will be disturbed by project activities; occurrence of wetlands in the vicinity of the project, and potential effect of activities on wetlands;	Chapter 6, Section 6.2 Chapter 9, Sections 9.2 and 9.5 BSA.3, Attachments 3-B, 3-C and 3-F
• Streamflow data records (levels and yields) of surroundings lakes, rivers and brooks; and	Chapter 7, Section 7.2 BSA 3, Appendix 3-A, 3-D and 3-E
• Geotechnical properties of the area, such as slope stability and bearing capacity of facility foundations under both static and dynamic conditions, including ground ice and thermal conditions.	Chapter 9, Section 9.2.2 Chapter 22, Section 22.3.2 BSA.3, Attachment 3-D

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
The EIS shall predict how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events (e.g., flooding, dam breach, ice jams, rock slides, landslides, fire, outflow conditions and seismic events) could adversely affect the project and how this in turn could affect the environment (e.g., environmental emergencies due to extreme environmental conditions).	Chapter 21, Section 21.5 Chapter 22, Section 22.3
The EIS should describe measures that will be implemented to prevent and respond to such events.	Chapter 21, Section 21.3
The EIS should discuss the sensitivity of the project to changes in specific climate and related environmental parameters, including total annual rainfall, total annual snowfall, frequency and/or severity of precipitation extremes, watercourse levels and stream flow, groundwater flow and potential effect on wetlands.	Chapter 22
In addition, the EIS shall discuss:	
• potential geotechnical and geophysical hazards within the Project area, including potential seasonal subsidence, seismicity and faulting, risks associated with tailings dam, polishing pond dam and Victoria Dam, cut/fill slopes and constructed facilities. Where appropriate, the assessment should be supplemented by illustrations such as maps, figures, cross sections and borehole logs;	Chapter 9, Section 9.2.2 Chapter 19, Section 19.5 Chapter 22, Section 22.3.2 BSA.3, Attachment 3-D
• potential effects on foundation stability of major Project components from geological fractures and faults and associated implications of these features on project planning and engineering design. Those Project components assessed shall include, but are not limited to: tailings management facility, waste rock stockpiles, heap leach pad, overburden and organic stockpiles, tunnels, stopes and open pits;	Chapter 9, Section 9.2.2 Chapter 19, Section 19.5 Chapter 21, Section 21.5 Chapter 22, Section 22.3.2 BSA.3, Attachment 3-D
• potential effects of the groundwater level on mining operations or potential effects of mining operations on groundwater flow and occurrence; and	Chapter 6, Section 6.5
• potential effects of climate change on the Project.	Chapter 22. Section 22.3
The EIS shall provide measures and strategies to mitigate the potential effects of the environment on the project.	Chapter 22. Section 22.3
4.1.10 Environmental Management	
4.1.10.1 Planning	
The EIS shall describe the proposed Environmental Effects Monitoring Plans (EEMPs) for all stages of the Project and include a commitment by the Proponent to implement the EEMPs, should the Project proceed. EEMPs shall be developed in consultation with government agencies, the public and other stakeholders. This may occur after the EA, but shall be consistent with the information presented in the EIS. Pertinent legislation, regulations, industry standards, documents and legislative guides shall be used when developing EEMPs.	Chapter 2, Section 2.7
The EIS shall also outline a preliminary decommissioning and reclamation plan for the Project. The plan shall address ownership, transfer and control of the different Project components, as well as the responsibility for monitoring and maintaining structures. The EIS shall include a conceptual discussion of how decommissioning of permanent facilities may occur.	Chapter 2, Section 2.6

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.1.10.2 Monitoring and Follow-up Programs	
The EIS shall describe the environmental and socio-economic monitoring, rehabilitation studies and follow-up programs (collectively environmental effects monitoring programs or EEMP) to be incorporated into the Project (planning, design, construction, operation, closure and post-closure phases) in order to determine the effectiveness of mitigation measures and to restore the affected environment to ecologically and socially acceptable levels.	Chapter 5, Section 5.9 Chapter 6, Section 6.9 Chapter 7, Section 7.9 Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9 Chapter 13, Section 13.9 Chapter 14, Section 14.9 Chapter 15, Section 15.9 Chapter 16, Section 16.9 Chapter 17, Section 17.9 Chapter 18, Section 18.9 Chapter 19, Section 19.9 Chapter 23, Section 23.3.2
Monitoring studies and programs will ensure that the Project is implemented as proposed, that the mitigation or compensation measures proposed to minimize the Project's environmental effects are effectively implemented, and that the conditions set at the time of the Project's authorization and the requirements pertaining to the relevant laws and regulations are met. The monitoring program will also make it possible to check the proper operation of works, equipment and facilities. If necessary, the program will help reorient the work and possibly make improvements at the time of construction and implementation of the various elements of the Project.	
The purpose of the follow-up program is to verify the accuracy of the predictions made in the assessment of the effects as well as the effectiveness of the mitigation measures. The follow-up program shall be designed in consultation with the Environmental Assessment Committee members for this project to incorporate project baseline information (including modeling data), as well as compliance data (e.g., established benchmarks, regulatory documents, standards or guidelines) and real-time data (e.g., observed data gathered in the field).	
Effects predictions, assumptions and mitigation actions that will be tested as part of the follow-up program shall be framed as field-testable monitoring objectives. The monitoring design should include a statistical evaluation of the adequacy of existing baseline data, to provide a benchmark against which to test for project effects and the need for any additional pre-construction or pre-operational monitoring to augment baseline data. The duration of the follow-up program shall be as long as is needed to evaluate the effectiveness of the mitigation measures.	
If either of these programs identifies unforeseen adverse environmental effects, the Proponent shall commit to adjust existing mitigation measures, or, if necessary, develop new mitigation or compensation measures. The Proponent shall describe how the results of monitoring and follow-up programs will be used to refine or modify the design and implementation of management plans, mitigation measures and Project operations. The Proponent shall distinguish as appropriate between monitoring (compliance) and effects follow-up programs.	
A schedule for follow-up frequency and duration is required after an evaluation of the length of time needed to detect effects, given estimated baseline variability, likely magnitude of environmental effect and desired level of statistical confidence in the results.	
The proposed approach for monitoring shall be described and shall include: a) The objectives of the monitoring program and a schedule for collection of the monitoring data required to meet these objectives; b) The sampling design, methodology, selection of the subjects and indicators to be monitored, and their selection criteria; c) The frequency, duration and geographic extent of monitoring, and justification for the extent; d) The application of the principles of Adaptive Environmental Management;	

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
e) Reporting and response mechanisms, including criteria for initiating a response and procedures; f) The approaches and methods for monitoring the cumulative effects of the Project with existing and future developments in the Project area; g) Integration of monitoring results with other aspects of the Project including adjustments to operating procedures and refinement of mitigation measures; h) Experience gained from previous and existing monitoring programs; i) The advisory roles of independent experts, government agencies, communities, and renewable resource users; j) Procedures to assess the effectiveness of monitoring and follow-up programs, mitigation measures and recovery programs for areas disturbed by the Project; and k) A communications plan to describe the results of monitoring to interested parties.	
The Proponent shall explain how the public shall continue to be involved, including participation in the design and implementation of environmental management and monitoring and follow-up programs.	Chapter 3, throughout
The Proponent shall describe plans to maintain communications and working relationships with the affected communities, municipalities and government agencies throughout the life of the Project. The intent of these plans is to involve those groups in monitoring and follow-up programs, including in the identification and work towards the reduction of adverse physical, biological or socio-economic effects, and the enhancement of beneficial effects.	Chapter 3, throughout
To design complete and comprehensive program proposals, the Proponent shall prepare and submit these documents subsequent to the completion of the environmental assessment, but before the initiation of the Project itself.	Noted
An example is seen in the NL Endangered Species Act and the federal Species at Risk Act (SARA) that contain provisions requiring that measures be taken to monitor adverse effects of a project on listed wildlife species and their habitat. If potential adverse effects on a listed wildlife species or its habitat are identified, a monitoring plan shall be developed to identify the circumstances under which corrective measures may be needed to address any issue or problem identified through the monitoring (i.e., if unanticipated effects occur or the importance of effects is greater than anticipated). The monitoring plan should clearly describe how government departments responsible for the species in question would be engaged in reviewing proposed adaptive management measures, in the event that mitigation measures are not effective.	Chapter 8, Section 8.9 Chapter 9, Section 9.9 Chapter 10, Section 10.9 Chapter 11, Section 11.9 Chapter 12, Section 12.9
4.1.11 Residual Adverse Environmental Effects	
The EIS shall describe any expected residual effects of the Project on the biophysical and human environments, after mitigation measures have been applied. The residual effects should be described. The EIS shall provide sufficient detail so that the environmental effects of the Project and the degree to which they can be mitigated, can be clearly understood.	Chapter 4, Section 4.5 Chapter 5, Section 5.5 Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5

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EIS Guidelines	EIS Reference
	Chapter 12, Section 12.5 Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5 Chapter 17, Section 17.5 Chapter 18, Section 18.5 Chapter 19, Section 19.5
The criteria for evaluating residual effects (including cumulative effects) shall be described. The criteria may include: magnitude; duration and frequency; ecological or socioeconomic context; geographic extent; and degree of reversibility. Professional expertise and judgment may also be applied. The EIS shall contain enough detail to enable readers to follow the reasoning and process by which the Proponent assessed effects.	Chapter 4, Section 4.4.1 Chapter 5, Section 5.3.1 Chapter 6, Section 6.3.1 Chapter 7, Section 7.3.1 Chapter 8, Section 8.3.1 Chapter 9, Section 9.3.1 Chapter 10, Section 10.3.1 Chapter 11, Section 11.3.1 Chapter 12, Section 12.3.1 Chapter 13, Section 13.3.1 Chapter 14, Section 14.3.1 Chapter 15, Section 15.3.1 Chapter 16, Section 16.3.1 Chapter 17, Section 17.3.1 Chapter 18, Section 18.3.1 Chapter 19, Section 19.3.1 Chapter 20, Sections 20.2.5, 20.3.5, 20.4.5, 20.5.5, 20.6.5, 20.7.5, 20.8.5, 20.9.5, 20.10.5, 20.11.5, 20.12.5, 20.13.5, 20.14.5, 20.15.5, 20.16.5
The EIS shall state the Proponent's conclusion, for each VEC, as to whether the Project in combination with the cumulative effects of other projects and activities is likely to cause adverse effects.	Chapter 20
4.1.12 Economic and Social Benefits of the Project	
Information on the predicted economic and social benefits of the Project should be presented. This information shall be considered by Government in assessing the justifiability of any adverse environmental effects, if necessary.	Chapter 15, Section 15.5
The Proponent shall demonstrate prudent resource management in compliance with Section 6.(1b) of the *Mining Act*, to the satisfaction of the Minister of Natural Resources.	Chapter 1, Section 1.4 Chapter 2, Section 2.7
4.1.13 Benefits of the EA to Newfoundland and Labrador	
The EIS shall describe how the EA process for the Project benefits Newfoundlanders and Labradorians, focusing on aspects such as:	

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• maximized environmental benefits: describe the expected environmental benefits as a result of the project;	Chapter 2, Section 2.9.4 Chapter 23, Section 23.4
• contribution of the EA to sustainable development: describe how the EA process for the project is expected to contribute to the concept of sustainable development for a healthy environment and economy;	Chapter 2, Section 2.9.4 Chapter 23, Section 23.3 and 23.6
• public participation: describe how public participation in the EA is expected to influence the project design and the environmental effects analysis;	Chapter 3, Sections 3.4 and 3.5 Chapter 4, Sections 4.1, 4.2
• technological innovations: describe new technologies expected to be developed to address environmental effects that could be used for other projects;	Chapter 2, Section 2.9.4 Chapter 23, Section 23.3
• increases in scientific knowledge: describe any new scientific information expected to be collected through the EA or follow-up that could benefit the assessment of other projects;	Chapter 2, Section 2.9.4 Chapter 23, Section 23.3
• community and social benefits: describe any expected changes in project design that would result in indirect benefits to communities and/or social benefits; and	Chapter 2, Section 2.9.4 Chapter 23, Section 23.4
• a commitment to develop a Benefits Agreement and Gender Equity and Diversity Plan that meets the approval the Minister of Natural Resources and Minister for the Status of Women.	Chapter 2, Section 2.9.4 Chapter 3, Section 3.5 Chapter 15, Section 15.5 Chapter 23, Section 23.3.1
4.1.14 Assessment Summary and Conclusions	
The EIS shall summarize the overall findings of the EA, with emphasis on the main environmental issues identified. For all VECs, the EIS shall include a table that summarizes: • the Project's potential adverse environmental effects; • proposed mitigation and compensation measures; • proposed follow-up; • potential residual effects; • potential cumulative effects; • potential effects of accidents and malfunctions on the VEC; • applicable standards or guidelines; • comments from the public and responses; and • commitments made by the Proponent, including the timing and responsibility of each.	Chapter 23, Table 23.1
4.1.15 Public participation	
The EIS shall describe a planned program of public participation and consultation, including, but not limited to the following: a) an opportunity for interested members of the public to meet with the proponent at a place adjacent to or within the geographical area of the undertaking, or as the minister may determine, in order to: i. provide information concerning the undertaking to the people whose environment may be affected by the undertaking;	Chapter 3, throughout

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EIS Guidelines	EIS Reference
ii. describe the rationale for the gold mine, impacts to wildlife, impacts to tourism, and any other pertinent details to address public concerns; iii. record and respond to the concerns of the local community raised during the public meeting regarding the environmental and socioeconomic effects of the undertaking, and to describe those concerns and the proponent's response to those concerns in a separate section of the EIS; and iv. iv. conduct the meeting in compliance with the legislation and with divisional policy included in Appendix A.	
4.1.16 Environmental Protection Plan (EPP)	
The proponent shall prepare an EPP for construction and operation of the Valentine Gold Project, for approval by the Minister of Municipal Affairs and Environment, prior to commencing any construction. The EPP shall be a stand-alone document that targets the site foreperson, the proponent's occupational health and safety staff, the proponent's environmental staff and any government environmental surveillance staff. The EPP shall address construction, operation and maintenance activities associated with the project.	Noted
A proposed Table of Contents and an annotated outline for the EPP is to be presented in the EIS which shall address the major construction and operational activities, permit requirements, mitigation measures and contingency plans, as follows: • proponent's environmental policies, • environmental compliance monitoring, • environmental protection measures, • mitigation measures, • permit application and approval planning, • contingency planning for accidental and unplanned events, • statutory requirements, and • revision procedures and contact lists.	Noted
The proponent shall prepare and submit the EPP for approval subsequent to the completion of the EIS, and prior to the initiation of project construction.	Noted
4.1.17 References	
The proponent shall include a complete and detailed bibliography of all data and information sources used to prepare the EIS. The same requirement applies to each baseline study.	Noted
4.2 Detailed Guidance on Select Environmental Studies	
The following section provides an overview of the baseline studies and approach to be undertaken in the EIS for each VEC. Detailed study approaches and analytic methods and assumptions shall be provided in each baseline study.	Noted
4.2.1 Baseline Studies	
Baseline studies are required for this EIS. The baseline studies shall describe and provide data on specific components such as to address baseline data requirements to support the evaluation of one or more VECs, environmental effects and/or to develop mitigation measures and follow-up monitoring programs. Each baseline study shall be a stand-alone document which may be appended to the EIS upon submission. The results of each baseline study shall be included	BSA.1 to BSA.10

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and referenced in the EIS. Where new information becomes available, additional baseline studies may be required.	
Baseline studies should generally have the following format: a) Rationale/Objectives: In general, the baseline studies should be conducted to obtain all required data for use in determining the potential for effects on one or more VEC as well as for monitoring and follow-up programs. b) Study Area: The boundaries of the study area shall be defined depending on the characteristics of one or more VECs being investigated. c) Methods: Methods shall be proposed by the Proponent, in consultation with resource agencies, as appropriate. The methods used in each baseline study shall be described in the EIS. d) Study Outputs: - Study outputs shall be proposed by the Proponent. Information and data generated shall be sufficient to adequately predict the effects on one or more VEC and to determine monitoring and follow-up requirements; - All maps are to be presented using Geographic Information System (GIS) with shape files; - Raw data shall be included in the Appendices in electronic tabular form and shape files for GIS; and - Identification of all information sources.	BSA.1 to BSA.10
Baseline studies shall be prepared for the following: • dam safety (Project dams and potential effects on the Victoria Lake reservoir, dam, dykes and canal); • woodland caribou (including habitat, migratory behaviour, and cumulative effects); • water resources; • fish, fish habitat and fisheries; • acid rock drainage and metal leaching (ARD/ML) assessment, prediction, and mitigation; • atmospheric environment including greenhouse gas (GHG) emissions; • avifauna (migratory and non-migratory), other wildlife and their habitats (including Sensitive Wildlife Areas); • species at risk and species of conservation concern; • population health and community services infrastructure; and • historic resources.	BSA.1 to BSA.10
4.2.1.1 Dam Safety	
Dam safety relates to the actions taken to protect the public and the environment from the effects of dam failure, as well as the release of any or all of the retained fluids or materials behind the dam. The standard of care to be exercised in the management of dam safety shall be commensurate with the consequences of a dam failure and due diligence shall be exercised at all stages of a dam's life cycle. A dam owner shall establish dam safety management systems that incorporates polices, responsibilities, plans and procedures, documentation, training, and review and correction of deficiencies and non-conformances. The potential effects of tailings management area dams and other dams of the Project shall be assessed properly so that suitable mitigative measures can be established.	BSA.1

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EIS Guidelines	EIS Reference
4.2.1.1.1 Definition and Rationale for Selection	
Dam safety has been included in the baseline studies because of the potential impact project dams may have on a number of different identified VECs. Dam safety has the potential to have significant impacts on the downstream public and environment. A dam is a barrier constructed for the retention of water or other substances including tailings. VECs potentially impacted by dam safety include the Victoria Dam and reservoir, waterbodies, fish and fish habitat, the economy, community services and infrastructure, and community health.	BSA.1
4.2.1.1.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions include: • proximity of the Project site to the Victoria Dam owned and operated by Nalcor; • effects of a possible tailings dam failure and cascade effects on the Victoria Lake reservoir, Victoria dam, other downstream dams, downstream communities, infrastructure and the environment; • impacts of non-tailings dam failures; • impact on the operational reservoir levels of the Victoria Lake reservoir; • impact of blasting activities at the Project site on the Victoria Dam; • need for communication, coordination and cooperation between the Proponent and Nalcor concerning dam safety, site access, etc.; and • impacts of the Project on water quality in the Victoria Lake reservoir and downstream watersheds, and whether this may impact Nalcor dams.	Chapter 19, throughout BSA.1
4.2.1.1.3 Existing Environment	
The baseline study shall describe natural site conditions and the proposed Project site with any dams. The description of the existing environment in the EIS shall include: • information on the Proponent's existing dam safety management practices and programs covering the life cycle of a dam from design to closure; • description of the foundation material proposed dams shall be constructed upon; • current level of communication, coordination and cooperation with Nalcor concerning dam safety	Chapter 19, Sections 19.1, 19.2 BSA.1
4.2.1.1.4 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on dam safety shall be assessed for all phases of the Project and potential accident scenarios including dam failure. In conducting the analysis on dam safety, the EIS shall consider best practices as per the Canadian Dam Association, Dam Safety Guidelines and Bulletins. The EIS shall provide a description of measures to mitigate effects and list potential residual effects.	Chapter 19, Sections 19.4, 19.5 Chapter 24, Sections 24.2, 24.3 BSA.1
The Dam Safety Baseline Study shall describe the design for any proposed Project site dams including dam location, an assessment of alternate locations, dimensions, embankment slopes, materials, number of construction phases and phased construction type (upstream, centerline, or downstream raise). Project site dams may include tailings dams, polishing pond dams, containment dams, solution pond dams, and stormwater management dams. A determination of the dam consequence classification as per the Canadian Dam Association, Dam Safety Guidelines, shall be provided for all dams as this will form the basis of the	Chapter 2, throughout BSA.1

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EIS Guidelines	EIS Reference
dam design and requirements for the dam safety management program to be established by the Proponent.	
The Dam Safety Baseline Study shall include: • rationale and justification for the selected tailings management area site and design including an assessment of potential impacts and associated costs at alternative site locations; • dam break inundation modelling and mapping to help determine the consequence classification of any dams associated with the Project and for inclusion in a future Emergency Preparedness and Response Plan; • an assessment of Project impacts on the Victoria Dam, other water control structures on the Victoria Lake Reservoir, other downstream dams on both the Exploits River system and Bay d'Espoir system, downstream communities, infrastructure and environments in consultation with 3rd party dam owners (Nalcor), including a possible cascade failure of the Victoria Dam and other downstream dams. The Proponent should discuss the development of a cascade failure analysis model of the tailings dam on the Victoria Dam, other Victoria Reservoir control structures, and other downstream dams on both the Exploits River system and Bay d'Espoir system using existing dam break model information developed by the dam owner; • an assessment of water quality impacts from regular discharge from the tailings management area, or a leak or failure of the tailings dam on the Victoria Lake reservoir and dam; • the provision of input parameters (e.g., seismic loads, ground acceleration, dam break flood flows, etc.) to be used in hydrologic, hydraulic and geotechnical models by 3rd party dam owners (Nalcor) whose dams may be impacted by the Project to help determine possible impacts in consultation with 3rd party dam owners; • determination if tailings are acid generating or not, as this will inform the closure phase of the tailings management area, and provide details on plans for closure of the tailings management area that also incorporate consideration for climate change; • provide an overview of the closure plans for other Project dams and associated infrastructure that also incorporate consideration for climate change. Outline who will be responsible for long-term closure activities in the event of changes to the status of the Proponent (e.g., bankruptcy, change in ownership) and how closure activities will be financed; • identification of components of the dam safety program to be established by the Proponent based on the consequence classification of Project dams including the Emergency Preparedness and Response Plan, frequency of inspections and Dam Safety Reviews, annual inspection reports, training of staff, monitoring and surveillance instrumentation to be installed and operated, operations curves, etc. Provide a plan for how the Proponent will prove and validate the safety of its dam structures to regulators and affected 3rd party dam owners (Nalcor); and • a plan for how communication and the transfer of information between the Proponent and affected 3rd party dam owners (Nalcor) will be achieved including but not limited to updates to Emergency Preparedness and Response Plans, notification of spilling, notification of blasting, joint emergency exercises, updating of dam break flood mapping, access road issues, and review of reports and design drawings.	Chapter 2, Sections 2.1, 2.3.4, 2.4.7, 2.5.3, 2.7, 2.11 Chapter 19, throughout Chapter 21, Section 21.5.1 BSA.1

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EIS Guidelines	EIS Reference
4.2.1.2 Woodland Caribou (Habitat, Migratory Behaviour and Cumulative Effects)	
The effects of the Project on woodland caribou, including their habitat and migratory behaviour will be assessed within the Project study area and throughout the range of affected caribou herds. A cumulative effect is defined as a change in the environment caused by multiple interactions among human activities and natural processes that accumulate across space and time and a cumulative effects assessment is a systematic process of identifying, analyzing, and evaluating cumulative effects. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out will generally be different from (larger than) the boundaries for assessing the effects of the Project.	Chapter 11, throughout Chapter 20, Section 20.8 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
4.2.1.2.1 Definition and Rationale for Selection	
Woodland caribou, in the context of VEC definition, refers to woodland caribou that are potentially using, breeding, moving and/or migrating through the Project area and potentially impacted by the Project and associated infrastructure/activities, including from cumulative effects due to other land use in the area. Woodland caribou are important to local residents, regional stakeholders, and regulatory authorities (i.e. municipal, provincial and federal) for recreation, economic and/or management considerations.	Noted
The Project is located directly within the migration corridor between spring/summer/fall and winter ranges for the Buchans and Gaff Topsails caribou herds and is located within the spring, summer and fall ranges for the Grey River, Lapoile and Buchans caribou herds. Migration corridors are also paralleled by the proposed transmission line and intersected by the proposed road. Caribou are known to avoid industrial mining activities and migration routes are extremely sensitive to disturbance.	Noted
4.2.1.2.2 Potential Project-VEC Interaction	
Potential Project-VEC interactions include: • Habitat loss and avoidance, or degradation due to construction and operation of Project facilities and associated infrastructure; • Impacts of increased access and related land use; • Effects of emissions/discharges (including dust) from the Project and associated infrastructure/activities on habitat quality and habitat use; • Direct and indirect effects (e.g. mortality, avoidance, calf recruitment, etc.) of construction, operation and/or decommissioning and/or accidents and malfunctions during these Project phases; and • Effects of noise, lights, and/or presence of the Project and associated infrastructure/activities on migratory corridors and connectivity between seasonal habitats, and implications to seasonally important habitats.	Chapter 11, Section 11.5 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
Cumulative effects of the Project and associated infrastructure/activities in relation to other land use through space and time in the Project region and within the affected caribou ranges.	Chapter 20, Section 20.8 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D

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EIS Guidelines	EIS Reference
4.2.1.2.3 Existing Environment	
The Woodland Caribou Baseline Study shall describe woodland caribou, their habitat and migratory behavior within the Project study area and throughout the range of the affected caribou herds. Caribou, their habitat, and migratory behaviour that could be affected by the Project and associated infrastructure/activities shall be characterized using existing data, supplemented by surveys as appropriate. The Proponent is required to contact the Department of Fisheries and Land Resources for further detail on the information requirements and to access existing caribou information/data.	Chapter 11, Section 11.2 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
The Woodland Caribou Baseline Study should give particular consideration to migratory corridors and seasonal connectivity between spring/summer/fall and winter ranges; and seasonally important habitats such as breeding, calving/post-calving, and wintering areas.	Chapter 11, Section 11.2 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
4.2.1.2.4 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on woodland caribou, their habitat and migratory behavior shall be assessed for all phases of the Project. In addition, the effects of potential accidents and malfunctions and cumulative effects associated with other industrial use (e.g. hydro reservoirs) of the area, including roads and transmission lines, shall be assessed.	Chapter 20 (maybe chapter 11?) BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
The Woodland Caribou Baseline Study shall present an analysis of the Project's effects on caribou, their habitat and migratory behaviour, giving consideration to, and demonstrating linkages to, predicted physical and biological changes resulting from the Project. Management tools (i.e. federal and provincial laws and policies, guidance, and provincial or regional strategies and plans) applicable to the protection of caribou and caribou habitat shall be considered in the EIS.	Chapter 11, Sections 11.1.1, 11.5
The Woodland Caribou Baseline Study shall: • assess the Project's effects of noise, light, and/or presence of the Project and associated infrastructure/activities on migratory corridors and connectivity between seasonal habitats, and implications to seasonally important habitats, and to also include: - Creation of zones of avoidance, - Physical hazards and attractants for wildlife (e.g. roads, pits, and other structural features), and - o Chemical hazards and attractants for wildlife (e.g. identified contaminants of potential concern).	Chapter 11, Section 11.5
quantify and describe overall loss, avoidance or alteration of caribou habitat that could result from the Project and its effect on caribou. Where possible, rank habitat value for caribou so that the loss of high-value areas can be assessed in the context of their regional availability and significant/uniqueness. Regional boundaries for assessment of relative habitat loss should be based on the population ranges for the affected caribou herds.	Chapter 11, Sections 11.2, 11.5.1
The Woodland Caribou Baseline Study shall describe measures to mitigate effects on caribou, their habitat and migratory behaviour and predict adverse residual effects. Such measures should also be assessed for their technical and economic feasibility. This includes plans and predictions for rehabilitation of the Project area, taking into account growth rates of local vegetation.	Chapter 11, Section 11.4

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EIS Guidelines	EIS Reference
The Woodland Caribou Baseline Study shall: • Outline mitigations that resolve the Project's effects on caribou migratory corridors and connectivity between seasonally important habitats based on clearly defined scientific research and literature, and best industry practices; • Outline mitigations that resolve the Project's effects on seasonally important caribou habitat; • Contain original research to refine timing and duration of spring and fall migration periods, connectivity between seasonal habitats and migratory behavior of local caribou herds; and • Contain original research to refine timing and duration of calving and post-calving periods of local caribou herds.	Chapter 11, Sections 11.2, 11.4 BSA.2, Appendix 2-A, 2-B, 2-C and 2-D
4.2.1.3 Water Resources	
The effects of the Project on water resources will be assessed within the local and regional drainage areas that can be reasonably expected to be affected by the Project. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out may be different from (larger than) the boundaries for assessing the effects of the Project. The water resources baseline study shall be comprised of three parts: i) groundwater, ii) surface water, iii) and wetlands. This baseline study shall act as a water resources management plan that includes information requirements pursuant to the Water Resources Act, SNL2002 cW-4.01 and its regulations and policies.	Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 9, Section 9.5 BSA.3, Appendix 3-A, 3-B, 3-C, 3-D, 3-E, 3-F
4.2.1.3.1 Definition and Rationale for Selection	
Water resources include the quality and quantity of groundwater and surface water resources in the vicinity of the Project, including wetlands. It has been selected because of: • its importance to ecosystem function (including recreational use and protection of aquatic life); • concerns regarding potential for release of hazardous materials on-site and potential contamination associated with mine and process water management; • possible lowering of water table and effects on surface water / groundwater interactions (e.g., wetlands, baseflow from headwaters of two major watersheds, etc.); and, • provisions of the NL *Water Resources Act*.	Noted
4.2.1.3.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions include: • the potential loss of natural waterbodies as part of the project; • effects related to mine water management as well as effects on water quality from effluent discharges and seepage; • potential ammonia contamination from incomplete combustion of exploded materials (e.g., directly to surface waters, or to groundwater via bedrock fractures); • effects on water quantity and hydrology/hydrogeology; • effects related to mine water use (demand);	Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 9, Section 9.5 Chapter 21, Section 21,5 BSA.3, Appendix 3-A, 3-B, 3-C, 3-D, 3-E, 3-F

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EIS Guidelines	EIS Reference
• effects to wetlands within the Project footprint and for areas that could be reasonably expected to be affected by the Project; alteration or loss of wetland quantity due to vegetation clearing, infilling, heavy equipment use and other vehicle traffic; • alteration of wetland quality (including ecosystem integrity and ability to function) due to changes in surface water hydrology, such as ponding, disruption of baseflow or surface water diversion; and • alteration of surface water and/or groundwater quality resulting from construction and/or operation (e.g. siltation, effluent discharge, spills) affecting wetlands and subsequent indirect effects to wetland plant communities; • wetlands that may be affected by Project activities according to their location, size, type (wetland class and form), species composition and ecological function; • effects of accidents and malfunctions; and • erosion and sedimentation, including dust deposition.	
4.2.1.3.3 Existing Environment	
4.2.1.3.3.1 Groundwater	
The Water Resources Baseline Study shall describe the hydrogeologic conditions at the Project site, including a complete assessment of groundwater resources within the project property. This should include a) a conceptual model of groundwater flow at the site both plan view and cross-sectional b) identification of locations for installation of monitoring wells to further delineate the shallow and deep groundwater regimes; and a groundwater flow model to use as a planning tool to evaluate the effects of the project on groundwater and vice versa. This computer model should be calibrated to evaluate whether or not there is any adverse effect on groundwater or surface water quality or quantity. It shall examine all available existing hydrogeology information required to assess the effects of the Project. Where knowledge gaps exist, the Proponent shall collect additional baseline information and provide it in the EIS.	Chapter 6, Section 6.2 BSA.3, Appendix 3-B, 3-C, 3-F
The Water Resources Baseline Study shall include: • a review of the geology of the Project area as it pertains to local and regional groundwater flow systems in the Project area (see list in Section 4.1.9); • the physical and geochemical properties of hydrogeological units, such as aquitards (see list in Section 4.1.9); • groundwater levels and a piezometric map for both shallow and deep groundwater regimes; • identifying any preferential flow paths for groundwater (both shallow and deep); • hydrogeologic maps and cross-sections for the Project area that outline the extent of aquifers, including stratigraphy, piezometric levels at different depths (to estimate vertical hydraulic gradients and show confined aquifers)/potentiometric contours; locations of wells, boreholes, springs, lakes and streams; groundwater flow direction; • groundwater flow patterns and chemistry, identifying recharge and discharge areas and identifying groundwater interaction with surface waters including for Long Lake, Valentine Lake, and Victoria Lake; • evaluation of aquifer characteristics and discharge rates; • assessment of groundwater quality; and	Chapter 6, Section 6.2 BSA.3, Appendix 3-B, 3-C, 3-F

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EIS Guidelines	EIS Reference
• a description of any local and regional potable groundwater resource in the area.	
Baseline information shall include existing water supply wells (if any) identified within the area of influence of the Project property. In the event there are existing wells, baseline water quality should be documented.	Chapter 6, Section 6.5.1
4.2.1.3.3.2 Surface Water	
The Water Resources Baseline Study should describe existing surface water quality, hydrology, bathymetry, sediment quality and transport within the area of influence of the Project. The baseline should provide the basis for the assessment of potential effects to surface water, presenting the range of water quality, sediment quality and transport, and surface water hydrology. A time-series graph of key variables and stream flows shall be provided to illustrate patterns and variability. The full range of stream flow characteristics, in addition to mean values, should be described. An assessment should be undertaken for watersheds and sub-watersheds within the footprint of the Project and regional watersheds potentially affected by discharge from the Project including Valentine Lake, Victoria Lake, Victoria River, Red Indian Lake, Exploits River, Bay d'Espoir drainage system and White Bear River.	Chapter 7, Section 7.2 BSA.3, Appendix 3-A, 3-D, 3-E
The Water Resources Baseline Study shall: • include delineation of pre-development drainage basins, at appropriate scales; • include delineation of drainage basins altered by development including direction of flow; • describe and present monitored hydrological data, such as water levels, bathymetry and flow rates in local streams and selected local lakes; • ensure that monitoring stations are included in the receiving environment as well as at end of pipe; • outline plans for the installation of Real Time Water Monitoring Stations (including possible quality, quantity, groundwater and climate stations) in all potentially affected watersheds and prior to the start of construction; • describe and assess hydrological regimes, including monthly, seasonal and year-to-year variability, normal flows, low flows, environmental (maintenance) flows and flood flows for selected return period flood events; • include flows or design peak flows for selected periods for the Project area, including an estimate of runoff to delineated altered drainage basins from diverting flows around the pit and underground workings area; • describe the interactions between surface water and groundwater flow systems under pre-development conditions and potential effects on these interactions during the various phases of the Project; • identify any local surface water users (i.e., potable or recreational use); • provide seasonal water quality field and lab analytical results and interpretation at several representative local stream and lake monitoring stations established at the Project site; and • establish precipitation monitoring at higher elevations above mean annual sea level to assist with runoff assessments.	Chapter 7, Sections 7.2 and 7.9 BSA.3, Appendix 3-A, 3-D, 3-E

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EIS Guidelines	EIS Reference
4.2.1.3.3.3 Wetlands	
Wetlands are defined as the wetlands within the vicinity of the Project or that could be affected by the Project. They have been included as a VEC because of their importance to project planning and potential to be affected by Project activities.	Chapter 9, throughout BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
Wetlands within the Project areas will be classified according to the *Canadian Wetland Classification System* (CWCS) (National Wetlands Working Group [NWWG] 1997). Efforts should focus on collection of data for wetlands with the greatest potential to be affected (i.e., within the Project footprint), while collecting data at the appropriate scale for regional comparisons.	Chapter 9, Section 9.2.2 BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
An overview of the key plant communities and animals that rely on wetlands shall be presented. Wetlands may be affected by Project activities associated with the open pit mine and infrastructure associated with the Project that will result in clearing of or disturbance to natural vegetation, site drainage or ground disturbance (e.g., grubbing, grading, and excavation).	Chapter 9, Section 9.2.2 BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
4.2.1.3.4 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on water resources shall be assessed for all phases of the Project and potential accident scenarios. The Water Resources Baseline Study will describe the potential effects to any waterbodies within the Project footprint.	Chapter 6, Section 6.5 Chapter 7, Section 7.5 Chapter 9, Section 9.5 Chapter 21, Section 21.5 BSA.3, Appendix 3-A, 3-B, 3-C, 3-D, 3-E, 3-F
With respect to accident scenarios, the discussion of effects to both ground and surface water resources shall include an analysis of effects of malfunctions and accidents events, taking into account: • the proposed transportation routes through the Project site (i.e., roads); • the use of explosive products (e.g., emulsion explosives, ANFO); • possible failure of heap leach or other harmful chemical containment; • transportation of fuel for the Project. The EIS shall describe potential accidents and malfunctions associated with the transportation of fuel on the Project site; and • the management, storage and disposal of used oil and associated potential for malfunctions and accidents events.	Chapter 21, Section 21.5
4.2.1.3.4.1 Groundwater	
The Water Resources Baseline Study shall assess the effects of the Project on groundwater at the mine site. The effects assessment should provide a quantitative groundwater analysis to determine how Project-related facilities and activities will affect groundwater flows, quality and quantity, such as any effects to nearby lakes, streams and wetlands, during all Project phases, including day-to-day operations and for malfunctions and accidental events. The assessment should describe the duration, frequency, magnitude and spatial extent of any effects and outline the need for mitigation and/or monitoring measures. Seepage rates, locations, quality and direction into or from the pits, underground workings, overburden/waste rock/ore stockpiles, settling pond and effects on groundwater stream flows and groundwater quality within the Project area should be assessed.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F

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EIS Guidelines	EIS Reference
Potential seepage to existing water bodies should be assessed (in relation to potential effects to fish and fish habitat, including baseflow recharge from groundwater). Mitigation strategies should be proposed.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
The environmental considerations, including effects on groundwater resources that have influenced the location and management of proposed groundwater monitoring and water supply wells, shall be provided.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
In summary, the following components should be provided:	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• a monitoring plan for groundwater levels and quality, before, during and after the Project;	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• estimation of water inflows into the open pits and underground workings and withdrawal rates from the open pits and underground workings;	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• assessment of a hydrological budget, including runoff, evapotranspiration and recharge rates under the various operation phases of the mine;	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• a description of the duration, frequency, magnitude and spatial extent of any effects to surface and groundwater resources caused by the Project (e.g., use maps and cross-sections developed in Section 4.18.3.1 to show effects); and	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• a description of potential cumulative and residual effects of the overall Project on regional water resources.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• The Water Resources Baseline Study shall also specify what groundwater supply wells, if any, are proposed on site as part of the Project and how they will be constructed and located in relation to the various mining activities in order to minimize effects on groundwater quality.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
• The analysis shall be based on acts, policies, guidelines and directives relating to groundwater quality and quantity, such as the Guidelines for Canadian Drinking Water Quality (1996). The EIS shall describe measures to mitigate effects on groundwater quality and quantity and predict adverse residual effects.	Chapter 6 BSA.3, Appendix 3-B, 3-C, 3-F
4.2.1.3.4.2 Surface Water	
The Water Resources Baseline Study shall assess the effects of the Project on surface water quality and quantity within the Project's zone of influence. Potential watershed effects associated with the dewatering, the creation of waste rock and overburden storage areas, water diversion, chemical storage, and the heap leach process shall be described. The assessment should describe the duration, frequency, magnitude and spatial extent of any effects and outline the need for mitigation and/or monitoring measures. The analysis of effects to surface water should include malfunctions and accident events.	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
The Water Resources Baseline Study shall:	
• include a detailed environmental water balance for the mine site, focused on predicted water balance inputs/outputs for a climate normal condition, dry- and wet- year conditions undertaken for major Project facilities including the open pits, underground workings, waste rock, tailings management facility, and overburden storage areas. For Project areas	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E

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EIS Guidelines	EIS Reference
whose footprint will expand over time, the EIS will assess the respective change in environmental water balance over Project life including the decommissioning and post-closure period;	
• provide a detailed operational and post-closure water balance for mine water management plan identifying Project water demands/uses and water source(s), potential effects on water sources and proposed mitigation to avoid or minimize effects;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• identify water and sediment quality objectives, including the receiving water criteria of the Canadian Council of Ministers of the Environment (CCME) including the *Canadian Environmental Quality Guidelines for the Protection of Aquatic Life* and the *Guidelines for Canadian Drinking Water Quality*, as applicable;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• provide details on stormwater management infrastructure design including ditching and detention ponds for the Project site;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• identify potential risks and impacts of the mine development on water quality and quantity from construction, operation, decommissioning, and long-term tailings storage;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• include modeling of water quality contaminant plumes from various failure scenarios and spills, including failure of the tailings management area and heap leach process, on affected watersheds including watersheds to the north (Exploits River) and south (Bay d'Espoir system and associated spillway rivers including White Bear River and Grey River);	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• provide details on potable drinking water and sewage infrastructure design for the proposed work camp;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• outline plans for the long-term operation and maintenance of Real Time Water Monitoring Stations (including possible quality, quantity, groundwater and climate stations) in all potentially affected watersheds over the life time of the project (in consultation with MAE);	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• provide an overview of the closure plans for the mine site and associated water related infrastructure;	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
• include a description of potential cumulative and residual effects of the overall Project on surface water resources; and	Chapter 7 Chapter 20 BSA.3, Appendix 3-A, 3-D, 3-E
• assess predicted wastewater effluent quality in relation to the requirements of the *Metal and Diamond Mining Effluent Regulations* (MDMER) of the *Fisheries Act.* The assessment should detail how proposed effluent is predicted to mix in the receiving environment for effluents discharged from the Project.	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
In conducting the analysis, the Proponent should consider pertinent acts, policies, guidelines and directives relating to surface water quality and quantity. The Water Resources Baseline Study shall describe measures to mitigate effects to surface water quality and quantity and predict adverse residual effects.	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E
The Water Resources Baseline Study should also address what measures would be taken by the Proponent if water quality or quantity were to be affected by the Project and how real time water monitoring stations will be used for this purpose.	Chapter 7 BSA.3, Appendix 3-A, 3-D, 3-E

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.2.1.3.4.3 Wetlands	
In conducting the analysis, the Water Resources Baseline Study shall consider pertinent acts, best practices, policies, guidelines and directives. The Water Resources Baseline Study shall provide a description of measures to mitigate effects and list potential residual effects.	Chapter 7, throughout BSA.3, Appendix 3-A, 3-D, 3-E BSA7, Appendix 7-D, 7-F, 7-I
Specifically, the Water Resources Baseline Study shall discuss the following:	Chapter 7, throughout BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
• The adverse environmental effects of the Project on wetlands shall be assessed for all phases of the Project, as well as accidental events. Wetland alteration is defined as changes to the wetland class or form, or changes to the performance of wetland functions resulting from disturbance to vegetation, soils, or hydrology. Wetland loss is defined as conversion of wetland to non-wetland (e.g., upland, lake, pond or watercourse) due to infilling, excavation or alteration to the hydrology. Wetland loss and wetland alteration shall be assessed within the context of wetland supply and wetland function.	Chapter 9, throughout Chapter 21, Section 21.5 BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
• The study shall describe the measures that will be applied to mitigate effects on wetlands and predict residual adverse effects. Proposed mitigation should be consistent with the provincial policy directive, *Policy for Development in Wetlands*. The EIS should provide justification for situations where avoidance of wetlands is not possible.	Chapter 9, Section 9.4 BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
• The study shall assess the potential effects of accidents and malfunctions during the construction and operations phases of the Project to wetlands (e.g., fuel spills).	Chapter 21, Section 21.5
• In conducting the analysis, the Water Resources Baseline Study should consider pertinent federal, provincial, municipal and local acts, policies, guidelines and directives relating to wetlands.	Chapter 9, throughout BSA.3, Appendix 3-A, 3-D, 3-E BSA.7, Appendix 7-D, 7-F, 7-I
• Further guidance related to the assessment of effects to wetlands can be found in the Environment Canada publication *Wetland Ecological Functions Assessment: An Overview of Approaches* (Hanson et al., 2008) and in *Wetland Mitigation in Canada: A Framework for Application* (Cox and Grose, 2000).	Noted
4.2.1.4 Fish, Fish Habitat and Fisheries	
The upstream and downstream effects of the Project on fish, fish habitat and fisheries will be assessed for all potentially-affected water bodies. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out will generally be different from (larger than) the boundaries for assessing the effects of the Project.	Chapter 8, Section 8.1.3 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
4.2.1.4.1 Definition and Rationale for Selection	
Fish includes parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.	Chapter 8, Section 8.1 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
Fish habitat means water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas.	Chapter 8, Section 8.1 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
Fishery with respect to any fish, includes, a) any of its species, populations, assemblages and stocks, whether the fish is fished or not, b) any place where fishing may be carried on, c) any period during which fishing may be carried on, d) any method of fishing used, and e) any type of fishing gear or equipment or fishing vessel used.	Chapter 8, Section 8.1 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
There is a recreational fishery which has significant financial impact linked to this area.	Noted
4.2.1.4.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions include: • Potential impacts, including non-compliance with the Fish and Fish Habitat protection Provisions of the Fisheries Act, associated with: - the construction of Project facilities or infrastructure including but not limited to; open pits, underground workings, tailings management facility, waste rock disposal sites, overburden storage areas, haul roads and surface and groundwater management activities; - water use and mining activities during operations; and • turbidity, siltation and other contamination from surface runoff.	Chapter 8, Section 8.3.3 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
4.2.1.4.3 Existing Environment	
The Fish, Fish Habitat and Fisheries Baseline Study shall describe the limnology, hydrology, freshwater biota, fish species, associated habitats and habitat distribution that have the potential to be affected by project activities. Information can be based on available published data, community consultation, and results of on-site baseline surveys. Baseline surveys should be conducted in accordance with direction as provided by DFO and shall be designed to: • provide necessary baseline data to support assessment of effects on the recreational fishery; • contribute to the development of mitigation measures to avoid non-compliance with the Fish and Fish Habitat protection Provisions of the Fisheries Act, and an offsetting plan to mitigate and compensate for the harmful impacts of the Project; • contribute to the development of a conceptual reclamation and closure plan; and • provide necessary baseline data to support on-going monitoring programs that assess the effectiveness of mitigation measures and offsetting plans.	Chapter 8, Section 8.2 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
Furthermore, the Fish, Fish Habitat and Fisheries Baseline Study shall: • characterize fish, fish populations and habitat where project activities have the potential to result in non-compliance with the Fish and Fish Habitat protection Provisions of the Fisheries Act (i.e., project footprint, upstream and downstream); • classify and quantify fish habitat, as per the:	Chapter 8, Section 8.2 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• Standards Methods Guide for the Classification/Quantification of Lacustrine Habitat in Newfoundland and Labrador; and • Standards Methods Guide for the Classification and Quantification of Fish Habitat in Rivers of Newfoundland and Labrador for the Determination of Harmful Alteration, Disruption or Destruction of Fish Habitat (Draft). • enumerate stream discharge measurements and water quality parameters upstream and downstream of affected water bodies; and • list any rare fish species that are known to be present.	
4.2.1.4.4 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on fish and fish habitat shall be assessed for all phases of the Project, as well as for accidents and malfunctions. The Fish, Fish Habitat and Fisheries Baseline Study shall describe measures to mitigate effects to fish and fish habitat and predict residual adverse effects including:	Chapter 8, Section 8.5 Chapter 21, Section 21.5 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
• measures to mitigate adverse effects to fish and fish habitat due to project related construction and operation related activities including but not limited; open pits, underground workings, waste rock disposal sites, overburden storage areas, haul roads, dewatering, blasting and surface and groundwater management activities;	Chapter 8, Section 8.4 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
• measures to prevent adverse effects to fish, fish habitat and water quality resulting from site water run-off or soil erosion;	Chapter 8, Section 8.4 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
• measures to mitigate flow changes resulting from open mine pits, underground workings, dewatering activities, ground water management, stockpiling and waste management, and diversions, including upstream and downstream; and	Chapter 8, Section 8.4 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
• a description and quantification of fish and fish habitat where Project activities may result in non-compliance with the Fish and Fish Habitat protection Provisions of the Fisheries Act, the provision of offsetting measures (i.e. fish habitat compensation strategy) to compensate for the potential impacts of the project, by maintaining or improving the productivity in the proposed offsetting area.	Chapter 8, Section 8.5.1 BSA.4, Appendix 4-A, 4-B, 4-C, 4-D, 4-E
4.2.1.5 Acid rock drainage and metal leaching (ARD/ML) assessment, prediction, and mitigation	
Acid Rock Drainage and Metal Leaching (ARD/ML) resulting from mining activities can have serious environmental effects long into the future and shall be considered throughout the life of the project as well as at the environmental assessment stage.	BSA.5, Appendix 5-A, 5-B
4.2.1.5.1 Definition and Rationale for Selection	
ARD/ML has been included as a component because of the potential impact acidic drainage and metal leaching may have on the surrounding and downstream environment. Waste rock materials from mining, mineral processing and related operations, which contain sulphide minerals such as pyrite, have the potential to be the source of acidic contamination and elevated metals in the environment. Such contamination is termed acid rock drainage / metal leaching (ARD/ML). The VECs that may be impacted by ARD/ML include dam safety surface waters, fish and fish habitat, and soils and vegetation.	BSA.5, Appendix 5-A, 5-B

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EIS Guidelines	EIS Reference
4.2.1.5.2 Potential Project-VEC Interactions	
As described in 4.2.1.5.1, VECs that may be impacted by ARD/ML include dam safety, surface waters, fish and fish habitat, and soils and vegetation.	BSA.5, Appendix 5-A, 5-B
4.2.1.5.3 Existing Environment	
ARD/ML occurs naturally within some environments as part of the rock weathering process but is exacerbated by large-scale disturbances characteristic of mining activities that may expose rocks containing an abundance of sulfide minerals to oxidation processes that create acid drainage and metal leaching.	BSA.5, Appendix 5-A, 5-B
In a mining setting it is leading practice to carry out a geochemical assessment of mine materials during the early stages of a project to determine the potential for ARD/ML. The geochemical assessment aims to map the distribution and variability of key geochemical parameters, acid generating and element leaching characteristics.	BSA.5, Appendix 5-A, 5-B
An ARD/ML program report for the project shall be established and approved by the Department of Natural Resources (NR) prior to the submission of the EIS. The phased ARD/ML sampling and testing program shall address characterization, prevention, mitigation, and monitoring of ARD/ML for all project phases (construction, operation, closure, post-closure), mining methods (open pit and underground), and material management units (ore, heap leach material, waste rock, overburden, quarry materials and tailings). The ARD/ML shall follow the "Prediction Manual for Drainage Chemistry from Sulphidic Geological Materials", MEND Report 1.20.0 December, 2009.	BSA.5, Appendix 5-A, 5-B
The results of the ARD/ML program shall be interpreted by an ARD/ML qualified person (QP) and the conclusions shall clearly state the potential for ARD/ML (using MEND, 2009 terminology) for each project phase, mining method and management unit. All QP recommendations regarding ARD/ML prevention, mitigation, and management strategies shall be carried out by the proponent and shall be integrated into the project design. The proponent should contact NR for details on QP qualifications.	BSA.5, Appendix 5-A, 5-B
The ARD/ML report shall address the types of tests conducted on the samples, recommendations for further testing and investigation, and provide specific details regarding the ongoing testing and monitoring program used to verify the initial ARD/ML program results. The ARD/ML report shall include the geologic unit and spatial distribution (x,y,z) for each sample to ensure that an adequate number of samples were taken from each unit. The results shall be representative of the unit in question considering the unit's variability and/or homogenous nature. As per the MEND (2009) guidelines, the QP should use the Neutralization Potential Ratio (NPR) in assessing ARD potential. Considerations in setting NPR criteria for classification of Potentially Acid Generating (PAG) vs Non-PAG material shall include site specific factors that may alter the relative magnitude of acid generating potential and neutralizing potential as well as safety factors that account for limitations in the precision and accuracy of sampling.	BSA.5, Appendix 5-A, 5-B
4.2.1.5.4 Effects Assessment and Mitigation	
The QP's ARD/ML report shall assess the potential leachate risks and make recommendations regarding ARD/ML prevention, mitigation and management strategies. These strategies shall be carried out by the proponent and shall be integrated into the project design. The QP's ARD/ML report shall provide specific details regarding the ongoing testing and monitoring program to verify the initial	BSA.5, Appendix 5-A, 5-B

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
ARD/ML program results as well as recommendations for further testing, including:	
• the ARD/ML prediction information (based on MEND guidelines) and historical site databases (if available) and experience that will be used to assess the potential leachate risks and determine mitigation requirements for the project. Site specific information should be provided for: mine waste rock, ore characterization, volumes, segregation/disposal methods, mitigation/management plans, contingency plans (e.g., environmental emergency contingency plans) operational and post-closure monitoring and maintenance plans;	BSA.5, Appendix 5-A, 5-B
• the feasibility of successfully segregating PAG and Non-PAG waste materials during operations, proposed geochemical segregation criteria and identification of operational methods that will be required to achieve geochemical characterization during operations (i.e., geochemical surrogates, on site lab, procedures needed etc.);	BSA.5, Appendix 5-A, 5-B
• sensitivity analysis to assess the effects of imperfect segregation of PAG rock;	BSA.5, Appendix 5-A, 5-B
• estimates of potential lag time to ARD/ML onset for PAG materials (including various waste rock, ore) and ability to fully saturate appropriate PAG materials during operation and post-closure based on regional experience, if any;	BSA.5, Appendix 5-A, 5-B
• open pit and underground water chemistry (existing, during operation & post-closure) and pit closure management measures (e.g., flooding). This should include geochemical modeling of pit water quality in the post-closure period;	BSA.5, Appendix 5-A, 5-B
• surface and seepage water quality from the mine waste rock stockpiles, other stockpiles and other infrastructure during operation and post-closure; and	BSA.5, Appendix 5-A, 5-B
• ARD/ML prevention and management strategies under a temporary or early closure scenario, including for ore.	BSA.5, Appendix 5-A, 5-B
4.2.1.6 Atmospheric Environment including Greenhouse Gas (GHG) Emissions	
The effects of the Project on atmospheric environment will be assessed within the area that can reasonably be affected by the Project, based on the distance to sensitive receptors. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out may be different from (larger than) the boundaries for assessing the effects of the Project.	Chapter 5, Section 5.1.3 BSA.6
The Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study will provide information relative to the predicted effects of climate change on the project, e.g., the possibility of flooding or other infrastructure damage. Provincial climate change projections for Port Aux Basques, Burgeo, Bay d'Espoir and Exploit's Dam should be considered when constructing and upgrading the access and haul roads, pit, underground workings and buildings.	Chapter 5, Section 5.1 BSA.6
The Province's carbon system went into effect on January 1, 2019 and includes performance standards for large industrial facilities and large scale electricity generation, measured in terms of GHG emissions per unit of output within a facility boundary, and a carbon tax on fuels combusted outside regulated facilities'	Chapter 5, Section 5.1.1 BSA.6

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
boundaries. Certain new industrial facilities are also required to utilize best available control technologies (BACT). The *Management of Greenhouse Gas Act* (MGGA) and its regulations are the mechanisms to implement performance standards and BACT, and the *Revenue Administration Act* (RAA) and its regulations are the mechanisms to implement a carbon tax.	
Using a project boundary as defined in section 2(c) of the MGGA and the reporting requirements described in sections 4 to 6 and 7(4)(q) of the *Management of Greenhouse Gas Reporting Regulations*, the Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study will provide details on projected annual production by type and annual materials moved, annual energy consumption by type during construction, operating and decommissioning phases (i.e., on-site stationary combustion, electricity generation, mobile transportation and blasting but excluding purchased electricity generated off-site), and associated annual GHG emissions by source during construction, operating and decommissioning phases. This information will determine whether the facility will be regulated under the MGGA (sections 4 and either 5 or potentially 5.1) and its regulations, and specifically whether it will be subject to BACT requirements of the *Management of Greenhouse Gas Regulations* (section 12.1). If GHG emissions within the project boundary are not regulated under a performance standard pursuant to the MGGA (section 5 or 5.1), they will be subject to RAA carbon tax provisions.	Chapter 5, Section 5.2 BSA.6
The Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study should separately provide details on annual energy consumption by type and annual GHG emissions by source for activities outside the project boundary such as on-road, air and marine transportation, purchased electricity (i.e., from Newfoundland and Labrador Hydro), and significant purchased services from providers outside the project boundary (e.g., a marine port facility). These GHG emissions will be subject to RAA carbon tax provisions.	Chapter 5, Section 5.2 BSA.6
4.2.1.6.1 Definition and Rationale for Selection	
Atmospheric environment is defined as air quality and the acoustic and visual environments (e.g., noise, vibrations, light) within the vicinity of the Project. Atmospheric environment has been selected based on: • protection of human health and safety, as well as ecological health and aesthetics; • potentially sensitive human and wildlife receptors; • provisions of the *Canadian Environmental Protection Act (1999)* (CEPA), and provisions of the *Air Pollution Control Regulations, 2004* under the NLEPA; • potential effects of climate change on the project and its infrastructure; and • potential for GHG emissions, under the *Management of Greenhouse Gas Act, 2016.*	Chapter 5, Section 5.1 BSA.6
GHG emissions have been included within this study because total annual project emissions will result in an increase in provincial GHG emissions totals while, at the same time, the provincial government has committed to significant reductions in GHG emissions by 2030. (The Province also has a 2020 GHG reduction target; however, project activities will not occur until after this date.). GHG emissions, both within and outside the project boundary, will be subject to provincial carbon pricing regulations.	Noted

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EIS Guidelines	EIS Reference
4.2.1.6.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions include:	
• Effects on ambient air quality due to; - particulate matter (e.g., dust) and other potential air contaminants during construction activities; - particulate matter (e.g., dust) and other contaminant releases during the operations phase including those potentially caused by: o mining operations; o handling or loading and unloading; o road dust (e.g., vehicle use on-site and off-site); o dust along hydro lines; o emissions from blasting; and o vehicle emissions.	Chapter 5, Section 5.3.3 BSA.6
• Effects on ambient sound levels associated with: - construction activities (both at the mine and off-site); and - mining and concentrating operations (including blasting).	Chapter 5, Section, 5.3.3 BSA.6
• Effects of artificial lighting at the project site during operation on the environment;	Chapter 5, Section 5.3.3 BSA.6
• Effects of climate change, i.e., predicted increases in precipitation and more frequent extreme weather events, on the project and risks to its activities and infrastructure; and	Chapter 5, Section 5.3.3 BSA.6
• GHG emissions generated within and outside the project boundary during the construction, operations and decommissioning phases of the project.	Chapter 5, Section 5.3.3 BSA.6
4.2.1.6.3 Existing Environment	
The Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study shall describe the following: • ambient air quality in the Project areas and, for the mine site, the results of a baseline survey of ambient air quality, focusing on, but not limited to the contaminants $PM_{2.5}$, PM_{10}, CO, SO_2 and NO_x; • current ambient noise levels at the mine site and within the local area, including the results of a baseline ambient noise survey. Information on typical sound sources, geographic extent and temporal variations shall be included; • existing ambient light levels at the Project site and at any other areas where Project activities could have an effect on light levels. The study should describe night-time illumination levels during different weather conditions and seasons; • provincial climate change precipitation projections for Port Aux Basques, Burgeo, Bay d'Espoir and Exploit's Dam (nearest regional sites); • historical and current provincial GHG emissions including emissions specifically from the industrial sector; and • compare and assess project GHG emissions in the context of the MGGA, the RAA and the provincial GHG reduction target for 2030.	Chapter 5, Section 5.2 Appendix 5B, 5C, 5D, 5E, 5F, 5G, 5H BSA.6

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EIS Guidelines	EIS Reference
4.2.1.6.4 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on the atmospheric environment shall be assessed for all phases of the Project. In addition, the effects of potential accidents and malfunctions and cumulative effects associated with other industrial use of the area, shall be assessed.	Chapter 5, Section 5.5 Chapter 20, Section 20.2 Chapter 21, Section 21.5 BSA.6
All potential Project emissions shall be estimated and an emissions inventory table shall be included in the Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study, listing emission sources (e.g., jaw crusher, the gyratory cone crushers, ball mills and associated conveyors, emergency backup generator etc.), operating periods and pollution control equipment (where applicable). A Best Available Control Technology (BACT) analysis may be required pending the details of the air pollution controls. Typical construction and operation-related emissions include, but are not limited to, particulates (PM_{10} and $PM_{2.5}$) and metals in dusts and fuel combustion by-products such as sulphur dioxide (SO_2), nitrogen oxides (NOx), carbon monoxide (CO) and carbon dioxide (CO_2).	Chapter 5, Sections 5.2.2.2, 5.2.2.3 Appendix 5B, 5C, 5D, 5E, 5F, 5G, 5H BSA.6
Potential odours from Project emissions at a local level (i.e., near Project equipment) shall be discussed and assessed. Quantities are to be expressed in mg/m3 and should be compared with provincial and national totals and mining sector totals.	Chapter 5.2.2.2 BSA.6
The Atmospheric Environment including Greenhouse Gas (GHG) Emissions Baseline Study shall identify sources and types of variation in Project-related light levels by providing information on duration, frequency and levels of light emissions. It should provide an assessment of effects of night-time light levels on wildlife and migratory birds. Include light emissions during different weather conditions and seasons.	Chapter 5, Section 5.2.2.5 Appendix 5A BSA.6
Mitigation measures shall be proposed to reduce or minimize adverse effects. The EIS will provide a prediction of adverse residual effects, including cumulative effects.	Chapter 5, Section 5.4 Chapter 20, Section 20.2
The effects of the project on provincial GHG emissions levels shall be assessed for all phases of the project and mitigation measures proposed to minimize GHG emissions during the operations phase of the project.	Chapter 5, Sections 5.4, 5.5.2 BSA.6
Annual estimates of production and materials moved, energy consumption by type and associated GHG emissions by source for all phases of the project should be provided as described in the *Management of Greenhouse Gas Reporting Regulations*. GHG emission for activities outside the project boundary should be reported separately from GHG emissions inside the project's boundary. GHG emissions should be measured as tonnes of CO_2 equivalent per year as per section 4 and Schedule C of *the Management of Greenhouse Gas Reporting Regulations.*	Chapter 5 BSA.6
If a facility emits at least 15,000 tonnes GHG emissions per year within the project boundary during the operations phase of a project, it may be regulated under either section 5 or 5.1 of the MGGA and the *Management of Greenhouse Gas Regulations*, and it will therefore be subject to BACT requirements for activities inside the project's boundary as outlined in section 12.1 of *the Regulations*. With respect to section 12.1, the EIS should propose a range of mitigation measures to reduce or minimize GHG emissions within the context of other regulatory requirements such as air pollutant, occupational health and safety, and fire and	Chapter 5 Chapter 23 BSA.6

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EIS Guidelines	EIS Reference
life safety regulations, and identify the recommended approach for consideration by the Minister.	
4.2.1.7 Avifauna (migratory and non-migratory), Other Wildlife and Their Habitats (Including Sensitive Wildlife Areas and any Protected Areas)	
The effects of the Project and associated infrastructure/activities on birds, and other wildlife and their habitats (including Sensitive Wildlife Areas and any Protected Areas) will be assessed within the Project study area and areas that could reasonably be affected by the Project activities in consultation with the Department of Fisheries and Land Resources. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out will generally be different from (larger than) the boundaries for assessing the effects of the Project.	Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
4.2.1.7.1 Definition and Rationale for Selection	
Birds, and other wildlife and their habitat refers to migratory and non-migratory species that are potentially feeding, breeding, moving and/or migrating through the Project area and impacted by the Project and associated infrastructure/activities. Species and other ecosystem components are important to local residents, regional stakeholders, and regulatory authorities (i.e., municipal, provincial and federal) for recreation, economic and/or management considerations.	Chapter 10, Section 10.1 Chapter 12, Section 12.1 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
4.2.1.7.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions include: • Habitat loss, avoidance or degradation due to construction and operation of Project facilities and associated infrastructure; • Impacts of increased access and related land use; • Effects of emissions/discharges (including dust) from the Project on habitat quality and use; • Direct and indirect effects (e.g. mortality, avoidance, etc.) of construction, operation and/or decommissioning and/or accidents and malfunctions during these Project phases; and • Impacts of noise, light and presence of Project facilities and associated infrastructure/activities on feeding, breeding, movement and/or migratory patterns.	Chapter 10, Section 10.3.3 Chapter 12, Section 12.3.3 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
4.2.1.7.3 Existing Environment	
The Avifauna, Other Wildlife and Their Habitats Baseline Study shall describe migratory and non-migratory birds (including waterfowl, raptors, shorebirds, marsh birds and other landbirds), small mammals, furbearers, and their habitat at the Project site and within the local and regional areas.	Chapter 10, Section 10.2.2 Chapter 12, Section 12.2.2 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
4.2.1.7.4 Migratory Birds	
Migratory birds are protected under the *Migratory Birds Convention Act* (MBCA) and associated Regulations. Birds protected under the *Migratory Birds Convention Act* are specifically named in the Environment Canada publication, "Birds Protected in Canada under the Migratory Birds Convention Act, Canadian Wildlife Service Occasional Paper No. 1." Preliminary data from existing sources should be gathered on year-round migratory bird use of the area (e.g., winter, spring migration, breeding season, fall migration).	Chapter 10, Section 10.1.1 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H

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EIS Guidelines	EIS Reference
In addition to information obtained from the Atlantic Canada Conservation Data Centre (ACCDC) and naturalists, other relevant datasets should be consulted, such as those available from: • Bird Studies Canada's "Nature Counts" web portal (http://www.birdscanada.org/birdmon/default/datasets.jsp); • the Quebec Breeding Bird Atlas 1984-89 (Les oiseaux nicheurs du Québec: atlas des oiseaux nicheurs du Québec méridional). A copy of this atlas is available at: http://www.atlasoiseaux.qc.ca/1eratlas_en.jsp; and • other data and projects, based on consultation with government and other agencies.	Chapter 10, Section 10.2.1 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
Existing data should be supplemented by surveys, where necessary. Surveys should be designed with reference to the Canadian Wildlife Service's Technical Report No. 508, A Framework for the Scientific Assessment of Potential Project Impacts on Birds (Hanson et al. 2010). Appendix 3 of the Framework provides examples of project types and recommended techniques for assessing effects on migratory birds. Survey protocols for migratory birds should be reviewed by ECCC-CWS prior to implementation.	Chapter 10, Section 10.2.1 BSA.7, Appendix 7-A, 7-B, 7-C, 7-E, 7-G, 7-H
4.2.1.7.5 Other Wildlife	
Other wildlife includes: • Small mammals; • Large mammals; e.g., moose • Furbearers Other wildlife and their habitats that could be affected by Project activities shall be characterized using existing data, supplemented by surveys as appropriate. The Proponent is required to contact Fisheries and Land Resources for further detail on the information requirements. The study must give particular consideration to areas, such as breeding, denning and/or wintering areas.	Chapter 12, Sections 12.1, 12.2 BSA.7, Appendix 7-A, 7-D, 7-F, 7-I
4.2.1.7.6 Effects Assessment and Mitigation	
The adverse environmental effects of the Project on birds, and other wildlife and their habitats should be assessed for all phases of the Project, and for malfunctions and accidental events.	Chapter 12, Section 12.5 Chapter 21, Section 21.5
The Avifauna, Other Wildlife and Their Habitats Baseline Study shall present an analysis of the Project's effects on habitats, giving consideration to, and demonstrating linkages to predicted physical and biological changes resulting from the Project. Management tools (i.e., federal and provincial laws and policies, guidance, and provincial or regional strategies and plans) applicable to the protection of wildlife and/or wildlife habitat shall be considered in the study.	Chapter 10, Section 10.2.2 Chapter 12, Section 12.2.2 BSA.7, Appendix 7-A, 7-B, 7-C, 7-D, 7-E, 7-F, 7-G, 7-H, 7-I
The Avifauna, Other Wildlife and Their Habitats Baseline Study shall:	
• Quantify and describe overall loss, avoidance or alteration of terrestrial habitat that could result from the Project and its effect on key species. Where possible, rank habitat value for each VEC species so that the loss of high-value areas can be assessed in the context of their regional availability and significance/uniqueness. Regional boundaries for assessment of relative habitat loss should be based on population ranges and/or regional assessment area; and	Chapter 10, Section 10.5.1 Chapter 12, Section 12.5.1 BSA.7, Appendix 7-A, 7-B, 7-C, 7-D, 7-E, 7-F, 7-G, 7-H, 7-I

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• Assess the Project's potential effects on wildlife behaviour, such as feeding, breeding, migration and movement, with respect to: - physical hazards and attractants for wildlife (e.g., roads, pits, and other structural features), - chemical hazards and attractants for wildlife (e.g., identified contaminants of potential concern), and - o sensory disturbance causing wildlife attraction or deterrence (e.g., noise, light, and human presence.	Chapter 10, Section 10.5.2 Chapter 12, Section 12.5.2 BSA 7, Appendix 7-A, 7-B, 7-C, 7-D, 7-E, 7-F, 7-G, 7-H, 7-I
The Avifauna, Other Wildlife and Their Habitats Baseline Study shall describe measures to mitigate effects on birds, and other wildlife, and their habitats and predict adverse residual effects. This includes plans and predictions for rehabilitation of the Project area, taking into account growth rates of local vegetation.	Chapter 10, Section 10.4 Chapter 12, Section 12.4 BSA 7, Appendix 7-A, 7-B, 7-C, 7-D, 7-E, 7-F, 7-G, 7-H, 7-I
4.2.1.8 Species at Risk and Species of Conservation Concern	
The effects of the Project on animal and plant Species at Risk (SARs) and species of special conservation concern will be assessed within the Project study area and areas that could reasonably be affected by the Project activities in consultation with the Department of Fisheries and Land Resources. Boundaries for assessing the cumulative effects of the Project in combination with other projects and activities that have been or will be carried out will generally be different from (larger than) the boundaries for assessing the effects of the Project.	Chapter 8, throughout Chapter 9, throughout Chapter 10, throughout Chapter 11, throughout Chapter 12, throughout
4.2.1.8.1 Definition and Rationale	
The definition and selection for SARs include: • Species that are listed under the federal Species at Risk Act (SARA) and relevant provincial legislation such as the NL Endangered Species Act (ESA), and • Species recommended for legal listing by COSEWIC, the NL Species Status Advisory Committee (SSAC), and ranked by the Atlantic Canada Conservation Data Centre (ACCDC) as S1, S2, or S3 or general status (Fisheries and Land Resources– Wildlife Division General Status of Wildlife Ranks) as may be at risk or undetermined.	Noted
Preservation of SARs is important for maintaining ecological integrity and species biodiversity. There are also legislative and policy requirements to protect SARs and their habitats. Any measures undertaken to mitigate and monitor effects must be consistent with applicable federal recovery strategies, federal action plans, or provincial recovery plans.	Noted Chapter 8, Section 8.1.1 Chapter 9, Section 9.1.1 Chapter 10, Section 10.1.1 Chapter 11, Section 11.1.1 Chapter 12, Section 12.1.1
4.2.1.8.2 Potential Project-VEC Interactions	
Potential Project-VEC interactions for SARs include: • Habitat loss, avoidance or degradation due to construction and operation of Project facilities and associated infrastructure; • Impacts of increased access and related land use; • Effects of emissions/discharges (including dust) from the Project on habitat quality and use; • Direct and indirect effects (e.g. mortality, avoidance, etc.) of construction, operation and/or decommissioning and/or accidents and malfunctions during all Project phases; and	Chapter 8, Section 8.3.3 Chapter 9, Section 9.3.3 Chapter 10, Section 10.3.3 Chapter 11, Section 11.3.3 Chapter 12, Section 12.3.3

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• Impacts of noise, lights, and presence of Project facilities and associated infrastructure/activities on disruption of feeding, breeding, movement and/or migratory patterns.	
Project activities that will result in clearing of or disturbance to natural vegetation, or ground disturbance (e.g., grubbing, grading, and excavation) may affect rare plant species by: • Altering or destroying individual rare plants, or habitat capable of supporting rare plant species; • Altering preferred habitat due to changes in surface water hydrology (e.g., ponding, surface water runoff patterns); • Destroying plants, or reducing health conditions of individuals and /or their habitat due to soil erosion, structural soil changes, or soil contamination; or • Displacing rare plants due to non-native and invasive species introduction.	Chapter 9, Section 9.3.3
4.2.1.8.3 Existing Environment	
As background for the analysis of the Project's effects on SARs, the Species at Risk and Species of Conservation Concern Baseline Study shall: • Identify all SARs that may be affected by the Project, using existing data and literature as well as surveys to provide current field data, as appropriate; • Provide assessments of regional importance, abundance and distribution that optimize the ability to detect all species at risk and sufficient survey effort to obtain comprehensive coverage; and • Identify residences, seasonal movements, movement corridors, habitat requirements, key habitat areas, identified critical habitat and/or recovery habitat (where applicable) and general life history of SARs that may occur in the Project area, or be affected by the Project.	Chapter 8, Section 8.2.2.5 Chapter 9, Section 9.2.2.2 Chapter 10, Sections 10.2.3.4, 10.2.3.5 Chapter 11, Section 11.2.2 Chapter 12, Section 12.2.2.3 BSA.8
The following information sources on species at risk and species of conservation concern should be consulted: • *Species at Risk Act* (SARA (www.sararegistry.gc.ca); • Newfoundland and Labrador *Endangered Species Act* (NLESA); • Committee on the Status of Endangered Wildlife in Canada (COSEWIC); • Species Status Advisory Committee (SSAC); • Department of Fisheries and Land Resources (FLR) – Wildlife Division General Status of Wildlife Ranks; • Atlantic Canada Conservation Data Centre (ACCDC); • Relevant Government agencies; and • Local naturalist and interest groups.	Chapter 8, Section 8.2.1 Chapter 9, Section 9.2.1 Chapter 10, Section 10.2.1 Chapter 11, Section 11.2.1 Chapter 12, Section 12.2.1 BSA.8
4.2.1.8.4 Effects Assessment and Mitigation	
The Species at Risk and Species of Conservation Concern Baseline Study should identify the adverse effects of the Project and associated infrastructure/activities on SARs, including individuals, critical habitat, recovery habitat, important habitat, and residences of species listed under SARA and the NLESA, species recommended for legal listing by COSEWIC, the SSAC, as well as adverse effects on species of conservation concern ranked by the ACCDC as S1, S2, or S3.	Chapter 8, Section 8.5 Chapter 9, Section 9.5 Chapter 10, Section 10.5 Chapter 11, Section 11.5 Chapter 12, Section 12.5 BSA.8
The Species at Risk and Species of Conservation Concern Baseline Study should describe specific measures that will be taken to avoid or reduce adverse effects	Chapter 8, Sections 8.4, 8.9

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
and to monitor them (consistent with any applicable federal recovery strategy, federal action plans, and/or provincial recovery/management plan). The effects analysis shall include project-specific effects and cumulative effects on SARs and their critical habitat, recovery habitat, important habitat, and/or residences.	Chapter 9, Sections 9.4, 8.9 Chapter 10, Sections 10.4, 10.9 Chapter 11, Sections 11.4, 11.9 Chapter 12, Sections 12.4, 12.9 BSA.8
The analysis shall take into account pertinent acts, policies, guidelines and directives relating to species at risk, such as: • Addressing Species at Risk Act Considerations Under the *Canadian Environmental Assessment Act* for Species Under the Responsibility of the Minister responsible for Environment and Climate Change Canada and Parks Canada (SARA-CEAA 2010), • The *Species at Risk Act* Environmental Assessment Checklists for Species Under the Responsibility of the Minister Responsible for Environment and Climate Change Canada and Parks Canada, • Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada (Environment Canada 2004), and • Newfoundland and Labrador: A Provincial Policy Regarding the Conservation of Species at Risk.	Chapter 8, Section 8.1.1 Chapter 9, Section 9.1.1 Chapter 10, Section 10.1.1 Chapter 11, Section 11.1.1 Chapter 12, Section 12.1.1
4.2.1.9 Population Health and Community Services Infrastructure	
The effects of the Project on the health of nearby human receptors including nearby cabin/cottage users and population health and community services infrastructure in the nearby communities of Millertown, Buchans, Badger, Grand Falls-Windsor and any other affected community (in accordance with Newfoundland and Labrador requirements) will be assessed.	Chapter 13, Section 13.5 Chapter 14, Section 14.5 Chapter 15, Section 15.5 Chapter 16, Section 16.5
4.2.1.9.1 Definition and Rationale for Selection	
Health and Community Health includes human health, wellness and family life, and can be influenced by socioeconomic factors as well as the programs and services available to promote and protect health. Human health includes perceptions related to quality of life. Community services and infrastructure includes: • employment and social services; • health services and social programs; • training and education services and programs; • safety and security; • housing and accommodation (residential and tourist); • municipal administrative capacity; • recreational services (e.g. walking trails); • transmission lines and other infrastructure; • municipal services and infrastructure; and • transportation infrastructure. Health is a resource for living, and can be positively or negatively impacted by changes to the physical and socioeconomic environment. The services and infrastructure listed above are important to maintaining and promoting the health of area residents and their availability may be reduced or otherwise impacted by the Project.	Chapter 13, throughout Chapter 14, throughout Chapter 15, throughout

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
4.2.1.9.2 Potential Project-VEC Interactions	
Individual and population health may be affected by physical environmental changes caused by the Project (e.g., dust, noise, light, recreational land use and/or aesthetic changes) as well as changes to the socioeconomic environment (e.g. income, education and housing). The interaction of the Project with community services and infrastructure is related to the Project's labour force. Project employment related effects will likely incur demographic change, and a subsequent increase in demand on services and infrastructure.	Chapter 13, throughout Chapter 14, throughout Chapter 15, throughout
4.2.1.9.3 Existing Environment	
4.2.1.9.3.1 Population Health	
Baseline conditions for applicable measures of population health shall be defined through a review of information from the Government of Newfoundland and Labrador and other relevant agencies and organizations. Where additional information is required, studies and/or interviews with local individuals shall be conducted.	Chapter 14, Section 14.2.2
4.2.1.9.3.2 Community Services Infrastructure	
Baseline conditions for population demographics and labour force, as well as existing community services and infrastructure, including housing and accommodations shall be defined through a review of information from the Government of Newfoundland and Labrador and other relevant agencies and organizations (e.g., municipalities, Indigenous governments and organizations, emergency service providers and tourism and accommodation agencies). Where additional information is required, field surveys and/or interviews with local individuals shall be conducted. In establishing the baseline for community services and infrastructure, particular attention should be paid to the capacity to handle any Project-induced increase in demand. Information relative to expected lifespan of infrastructure such as roads, water and sewer distribution and treatment facilities should be included in those baseline studies.	Chapter 13, Section 13.2.2
4.2.1.9.4 Effects Assessment and Mitigation	
The Population Health and Community Services Infrastructure Baseline Study shall describe and evaluate both positive and negative changes to population health and well-being (e.g., physical and mental health) and community services infrastructure that may occur as a result of Project-related effects to the environment, including concern about potential changes to the quality of life as a result of the Project.	Chapter 13, Sections, 13.4, 13.5, 13.6 Chapter 14, Section 14.4, 14.5, 14.6
4.2.1.9.4.1 Population Health	
This Population Health and Community Services Infrastructure Baseline Study shall describe and assess the following: • characterization of all possible sources of contaminants/emissions, exposure pathways and consumption patterns that may generate health effects (e.g., respiratory concerns for sensitive components of the population), if any; • the potential for health effects that may arise from changes in water quality and quantity; • the potential for health effects that may arise from noise or vibrations; • the effects of the Project on the health and safety of Project workers, and those working in the areas affected by the Project, including the possible effects of any accidents or spills;	Chapter 14, Section 14.5

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
• effects of the Project on social factors such as social connectivity, family cohesion, substance use, domestic violence and crime; and • implications of the Project on residents' perceptions of quality of life (e.g., from changes in recreational patterns and country foods consumption, light, noise, changes in landscape etc.).	
The Population Health and Community Services Infrastructure Baseline Study shall describe measures to mitigate negative effects, and to promote positive effects, to Population Health for both the construction and operation phases and predict the potential for adverse residual effects and their significance. Such measures should also be assessed for their technical and economic feasibility. Safety zones established in relation to Project blasting should be described. Pertinent acts, policies, guidelines and directives relating to health shall be considered.	Chapter 13, Sections 13.4, 13.5, 13.6 Chapter 14, Section 14.4, 14.5, 14.6 Chapter 15, Section 15.4, 15.5, 15.6
4.2.1.9.4.2 Community Services Infrastructure	
The Population Health and Community Services Infrastructure Baseline Study shall describe: • the existing inventory of infrastructure for both men and women in the community; • the effects of Project-related demand on community services and infrastructure, including water and sewage treatment; • plans for electrical power requirements for the Project and the impact on existing infrastructure and residents; • the potential traffic increase due to the Project, and associated health and safety implications; • assess the decrease in lifespan of physical infrastructure based on increased use that can be attributed to the project and its spinoffs; • quantify the value of any lost lifespan for infrastructure as a factor of overall replacement cost of that infrastructure (e.g., if a road has an estimated 10 years of wear remaining before it shall be re-constructed, and the project will reduce the lifespan of that road to 8 years, there should be quantification of the value of the lost two years of road use); • potential increase in passenger and freight traffic on the Trans-Canada Highway and through Gander International Airport or other nearby landing strips; • potential increase in passenger and freight traffic on ferry services across the Strait of St. Lawrence; • plans for supplying worker accommodations during construction and operation of the Project, including consideration of accommodations for supporting contractors and potential for supplying low-income and senior housing; and • the potential for blasting from the Project to effect municipal and/or residential infrastructure.	Chapter 13, Sections 13.2.2, 13.5 Chapter 14, Section 14.2.2, 14.5 Chapter 15, Sections 15.2.2, 15.5 BSA.9, Attached 9-A, 9-B
The Population Health and Community Services Infrastructure Baseline Study shall describe measures to mitigate effects on community services and infrastructure for both the construction and operation phases, as well as predicted adverse residual effects and their significance. Such measures should also be assessed for their technical and economic feasibility. That Plan should reduce, to the extent possible, acceleration of the effective lifespan of infrastructure. This should include specific consideration of mitigation to prevent displacement of current residents by Project employees/contractors from existing	Chapter 13 Chapter 14 Chapter 15

Table E.2 Concordance with Environmental Impact Statement Guidelines for the Valentine Gold Project, Marathon Gold Corporation (Provincial EIS Guidelines)

EIS Guidelines	EIS Reference
accommodations. Safety zones established in relation to Project blasting should be described.	
Pertinent acts, policies, guidelines and directives relating to community services and infrastructure shall be considered, including the Municipal Plans of nearby communities, as applicable.	Chapter 13 Chapter 14 Chapter 15
4.2.1.10 Historic Resources	
The impact of the Project on Historic Resources within the area of the development shall be subject to archaeological assessment. Such assessment will by conducted by the proponent who is required to hire an archaeological consultant to conduct the necessary archaeological impact studies to the satisfaction of the Provincial Archaeology Office.	Chapter 18 BSA.10
4.2.1.10.1 Definition and Rationale for Selection	
"Historic Resource" means a work of nature or of humans that is primarily of value for its archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest, including an archaeological, prehistoric, historic or natural site, structure or object. Historic Resource is included based on the potential effect of the Project upon historic resources as protected by RSNL1990 CHAPTER H-4 *Historic Resources Act.*	Noted
4.2.1.10.2 Assessment and Mitigation Requirements	
The proponent shall assess, protect, and where necessary, mitigate the impact of the development upon historic resources. This shall require, but not be limited to, a commitment to undertake the following: • Archaeological overflight surveys to identify high-potential locations not evident in aerial imagery. • Archaeological surveys including ground-truthing of selected areas as having enhanced archaeological potential within the Project Development Area. • Intensive ground-truthing of any archaeological sites that may be discovered within the project area. • Testing of power corridor, road routes and other infrastructure requirements (new and upgraded) at selected river crossings and lakeshores. • Archaeological assessment outside of the Project Area at locations where new development is, or may be, proposed.	Chapter 18 BSA.10
4.3 Commitments made in the EIS	
The EIS should provide a list of all commitments made regarding environmental mitigation, monitoring and follow-up. Each commitment shall be cross-referenced to the section of the EIS where it has been made.	Chapter 23, Section 24.3
5.0 EIS GUIDELINE DATA AND INFORMATION SOURCES	

Key Subject Index

Key Subject	Section of EIS
Effects on Other Wildlife and Habitat	12.5.1 and 12.5.2
Species at Risk	8.5, 9.5, 10.5, 11.5, 12.5
Community Services and Infrastructure	13.0
Effects on Local Housing and Accommodations	13.5.1
Effects on Local Services and Infrastructure	13.5.2
Community Health	14.0
Potential effects on human health	14.5.1 and 14.5.2
Employment and Economy	15.0
Effects on Regional Labour Force	15.5.1
Effects on Regional Business	15.5.2
Effects on Economic Activities of Guide Outfitters	15.5.3
Effects on Economy	15.5.4
Land and Resource Use	16.0
Effects on Land Use	16.5.1
Effects on Resource Use	16.5.2
Effects on Recreational Use	16.5.3
Indigenous Groups	17.0
Potential effects on traditional land use activities by Indigenous people	17.51, 17.5.2, 17.5.3 and 17.5.4
Historic Resources	18.0
Effects on historic resources	18.5.1
Dam Infrastructure	19.0
Effects on Dam Non-Project Infrastructure	19.5.1, 19.5.2 and 19.5.3
Cumulative Effects	20.0
Accidental Events	21.0
Environmental Management and Mitigation	2.7

Acronyms and Abbreviations

%HA	percent highly annoyed
°	degree
°C	degrees celsius
µg/cm^2	microgram per square centimetre
µg/L	micrograms per litre
µg/m^3	micrograms per cubic meter
µS/cm	microsiemens per centimeter
2D	two-dimensional
AAC	annual allowable cut
AAFC	Agriculture and Agri-Food Canada
AAFRD	Alberta Agriculture, Food and Rural Development
AAQM	ambient air quality monitoring
AARL	Anglo-American Research Laboratory
ABA	acid-base accounting
ABL	Atlantic Barite Limited
AC CDC	Atlantic Canada Conservation Data Centre
ACB	air contaminant benchmark
AEP	annual exceedance probability
amsl	above mean sea level
AN	anthropogenic
AN	ammonium nitrate
ANFO	ammonium nitrate/fuel oil
AP	acid potential
AQMP	Air Quality Management Plan
ARD	acid rock drainage
ARD/ML	acid rock drainage/metal leaching
AT	alder thicket
ATV	all-terrain vehicle
B.P.	Before Present
BACT	best available control technologies
BBMA	Black Bear Management Area
BBMM	Brownian Bridge Movement Model
BBS	North American Breeding Bird Survey
BF	Balsam Fir Forest
BFI	Base Flow Index

BIC	Benthic Invertebrate Community
BMA	Bear Management Area
BMPs	Best Management Practices
BMU	Bear Management Unit
BOC	Bank of Canada
BPIP	Building Profile Input Program
BS	Black Spruce Forest
BSA	Baseline Study Appendix
BV	Bed volumes
C	celsius
CAAQS	Canadian Ambient Air Quality Standards
$CaCO_3$	calcium carbonate
CACs	criteria air contaminants
CALPUFF	California Puff
CANFEM	*Canadian Foundation Engineering Manual*
CanSIS	Canadian Soil Information Service
CAO	Chief Administration Officer
CAS	Chemical Abstracts Service
CBC	Christmas Bird Count
CCHS	Canadian Community Health Survey
CCME	Canadian Council of Ministers of the Environment
cd	candela (measurement unit of glare)
CD	Census Division
CDA	Canadian Dam Association
CDN	Canadian
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
CH_4	methane
CIE	*Commission Internationale de L'Éclairage* (International Commission on Illumination)
CIL	carbon in leach
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CLI	Canada Land Inventory
cm	centimetre
CMA	Caribou Management Area
CMMP	Canadian Minerals and Metals Plan
CNA	College of the North Atlantic
CNF	Central Newfoundland Forest
CNWA	*Canadian Navigable Waters Act*
CNWM	Central Newfoundland Waste Management

CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalent
CoA	Certificate of Approval
CORMIX	Cornell Mixing Zone Expert System
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPUE	Catch per Unit of Effort
CRA	Conestoga-Rovers & Associates
CRHSR	Conne River Health and Social Services
CSD	Census Subdivision
CSI	Crime Severity Index
CSQG PEL	Canadian Sediment Quality Guideline Probable Effects Limit
CWB	Community Well-being
CWQG	Canadian Water Quality Guidelines
CWQG-FAL	Canadian Water Quality Guidelines for Protection of Freshwater Aquatic Life
dBA	A-weighted Decibels
dBBMM	Dynamic Brownian Bridge Movement Models
DDT	dichlorodiphenyltrichloroethane
DFO	Fisheries and Oceans Canada
DNA	deoxyribonucleic acid
DNR	Department of Natural Resources
DTH	down-the-hole
EA	environmental assessment
EBMP	Explosives and Blasting Management Plan
ECCC	Environment and Climate Change Canada
EDF	Environmental Design Flood
EEM	Environmental Effects Monitoring
EHS	Environment, Health and Safety
EIS	Environmental Impact Statement
ELC	Ecological Land Classification
ELCA	Ecological Land Classification Area
EMS	Environmental Management System
EOG	Earth Observation Group
EPP	Environmental Protection Plan
EPT	Ephemeroptera, Plecoptera, and Tricoptera
ES	Exposed Sand / Gravel Shoreline
ESA	*Endangered Species Act*
FDC	flow duration curve
FDP	final discharge point

FEL	front end loader
FM	flexible mesh
FMD	Forest Management District
FNFNES	First Nations Food, Nutrition and Environment Study
FNI	Federation of Newfoundland Indians
FOS	Factors of Safety
FSC	Food, Social and Ceremonial
FTE	full-time equivalent
g	gram
GCDWQ	Guidelines for Canadian Drinking Water Quality
GDP	Gross Domestic Product
GHG	greenhouse gas
GIS	geographic information system
GPDM	Guide for Plume Dispersion Modelling (Newfoundland and Labrador)
GPS	global positioning system
GVMS	Gross Value of Mineral Shipment
GWP	global warming potential
H	horizontal
ha	hectare
HADD	Harmful Alteration, Disruption or Destruction
HAPSET	Health and Post-Secondary Education Tax
HCN	hydrogen cyanide
HDDVs	heavy-duty diesel vehicles
HFC	hydrofluorocarbons
HGO	high-grade Ore
hr	hour
HRA	*Historic Resources Act*
HS	Hydrometric Station
HSI	Habitat Suitability Index
HV	high voltage
HVAC	high voltage alternating current
HYDAT	Hydrometric Data National Water Data Archive
Hz	hertz
IAAC	Impact Assessment Agency of Canada
IBC	Intermediate Bulk Containers
ICR	intensive cyanidation reactor
IDA	International Dark Sky Association
IDF	intensity-duration-frequency
IDF	inflow design flood

IES	Illuminating Engineering Society
IESNA	Illuminating Engineering Society of North America
INAC	Indigenous and Northern Affairs Canada
IPAUS	Invasive Plant Atlas of the United States
IPCC	Intergovernmental Panel on Climate Change
KB	Kalmia-Black Spruce Forest
kg	kilogram
KH	Kalmia Heath
km	kilometre
km/hr	kilometres per hour
km^2	square kilometre
KPI	Key Performance Indicator
kt	kilotonne
kt CO_2e/year	kilotonnes of carbon dioxide equivalents per year
kt/y	kilotonne per year
kV	kilovolt
L/d	litres per day
L/s	litres per second
LAA	Local Assessment Area
L_d	daytime equivalent sound levels
LDDTs	light-duty diesel trucks
LDGVs	light-duty gasoline vehicles
L_{dn}	adjusted day-night average sound level
L_{dn}	day-night average sound level
L_{eq}	equivalent sound pressure level
LGO	low-grade ore
LiDAR	light detection and ranging
L_n	nighttime equivalent sound levels
LNAPL	Light Non-Aqueous Phase Liquids
LOWL	Low Operating Water Level
LSD	Local Service District
LSI	Langelier Saturation Index
lux	Measure of light equal to one lumen per meter squared
LV	low voltage
m	metre
m asl	metres above sea level
m/s	metres per second
m^2	square metre
m^3	cubic metre

m^3/d	cubic metres per day
m^3/h	cubic metres per hour
m^3/L	cubic metres per litre
m^3/s	cubic metres per second
MAC	Mining Association of Canada
MAF	mean annual flow
$mag/arcsec^2$	magnitude per square second of arc
MAMKA	Mi'kmaq Alsumk Mowimsikik Koqoey Association
Marathon	Marathon Gold Corporation
masl	metres above sea level
MBCA	*Migratory Bird Convention Act*
mbgs	meters below ground surface
MCC	motor control centres
MCF	Mi'kmaq Commercial Fisheries
MDMER	*Metal and Diamond Mining Effluent Regulation*
MECP	Ministry of Environment, Conservation and Parks (Ontario)
MeHG	methyl mercury
µg	micrograms
mg/kg	milligram per kilogram
mg/L	milligrams per litre
µg/L	micrograms per litre
MGGA	*Management of Greenhouse Gas Act*
ML	Metal Leaching
ML/ARD	Metal Leaching/Acid Rock Drainage
mm	millimetre
mm/s	millimetres per second
Mm^3	million cubic metres
Mm^3/year	million cubic metres per year
MMA	Moose Management Area
MDMER	Metals and Diamond Mining Effluent Regulations
MMF	mean monthly flow
MNA	Monitored Natural Attenuation
µS	microsiemens
Mt	million tonnes
Mt/a	million tonnes per annum
MTLS	Metals
Mtpa	million tonnes per annum
MV	medium voltage
MW	Mixedwood Forest

MW	megawatt
N_2O	nitrous oxide
NAPS	National Air Pollution Surveillance
NBCC	*National Building Code of Canada*
NBDELG	New Brunswick Department of Environment and Local Government
NCDC	National Climatic Data Center
NDEP	Nevada Division of Environmental Protection
NE	northeast
NF_3	nitrogen trifluoride
NH_3	ammonia
NHS	National Household Survey
NIR	National Inventory Report (GHGs)
NL	Newfoundland and Labrador
NL EPA	Newfoundland and Labrador *Environmental Protection Act*
NL ESA	Newfoundland and Labrador *Endangered Species Act*
NLAAQS	Newfoundland and Labrador Ambient Air Quality Standards
NLDECCM	Newfoundland and Labrador Department of Environment, Climate Change and Municipalities
NLDF	Newfoundland and Labrador Department of Finance
NLDFFA	Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture
NLDFLR	Newfoundland and Labrador Department of Fisheries and Land Resources
NLDIET	Newfoundland and Labrador Department of Industry, Energy and Technology
NLDMAE	Newfoundland and Labrador Department of Municipal Affairs and Environment
NLDNR	Newfoundland and Labrador Department of Natural Resources
NLDOEC	Newfoundland and Labrador Department of Environment and Conservation
NL-EHJV	Newfoundland and Labrador Eastern Habitat Joint Venture
NLESD	Newfoundland and Labrador English School District
NLHC	Newfoundland and Labrador Housing Corporation
NLSF	Newfoundland and Labrador Snowmobile Federation
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	National Occupation Classification
NOWL	Normal Operating Water Level
NOx	nitrogen oxides
NP	Neutralization Potential
NPR	Neutralization Potential Ratio
NPRI	National Pollutant Release Inventory
NRCan	Natural Resources Canada

NS	Nova Scotia
NTU	Nephelometric Turbidity unit
NW	northwest
NWWG	National Wetlands Working Group
O_3	ozone
ºC	degrees Celsius
OLM	ozone limiting method
OMS	Operations, Maintenance and Surveillance
ONAN	oil natural air natural
OPS	Operational Policy Statement
OW	Open Water
PAG	potentially acid generating
PAHs	polycyclic aromatic hydrocarbons
PAO	Provincial Archaeology Office
PAX	aluminum polychloride
PFC	perfluorocarbons
PFS	Pre-Feasibility Study
PHAC	Public Health Agency of Canada
PM	particulate matter
PM_{10}	respirable particulate matter with an aerodynamic diameter less than 10 µm
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter less than 2.5 µm
PMF	probable maximum flood
POPC	parameters of potential concern
PPE	personal protective equipment
PRIME	Plume Rise Model Enhancement
PT	Particle Tracking
PWL	power levels
PY	person-years
QDC	Qalipu Development Corporation
QNR	Qalipu First Nations Natural Resources Division
RAA	Regional Assessment Area
RCMP	Royal Canadian Mounted Police
RCP	Representative Concentration Pathway
RCP4.5	Representative Concentration Pathway 4.5
RDL	Reportable Detection Limit
RF	Regenerating Forest
ROM	run-of-mine
RPS	Rare Plant Survey
RSF	Resource Selection Function

RT	Riparian Thicket
s	second
SAG	semi-autogenous grinding
SAR	Species at Risk
SARA	*Species at Risk Act*
SB	Shrub Bog
SC	Strategic Concepts Inc.
SDS	Safety Data Sheet
SE	southeast
SF	Shrub / Graminoid Fen
SF_6	sulfur hexafluoride
SFE	Shake Flask Extraction
SL-JSL	screening level – jurisdictional screening level
SMBS	sodium metabisulphite
SO_2	sulphur dioxide
SOCC	species of conservation concern
SOPs	Standard Operating Procedures
SQM-L	Sky Quality Meter with lens
SSAC	Species Status Advisory Committee
SW	southwest
t/y	tonne/year
TCU	True Colour Unit
TDS	Total Dissolved Solids
TEDD	Training and Economic Development Department
the Project	Valentine Gold Project
TMF	tailings management facility
TP	test pit
tpd	tonnes per day
TSP	total suspended particulate matter with an aerodynamic diameter less than 30 µm
TSS	total suspended solids
UD	utilization distribution
UFR	upward flux ratio
ULR	upward light ratio
UNFCCC	United Nations Framework Convention on Climate Change
UPS	uninterruptible power source
URT	upper risk threshold
US	United States
US EPA	United States Environmental Protection Agency

USA	United States of America
USD	United States Dollar
USGS	United States Geological Survey
V	vertical
VC	valued component
VFD	variable frequency drive
VHF	Very High Frequency
VOC	volatile organic compounds
VSD	Variable Speed Drive
W/m^2	Watts per square metre
WAD	Weak Acid Dissociable
WC	Wet Coniferous Forest
WD	Wildlife Division
WHO	World Health Organization
WRAN	Water Resources Atlas of Newfoundland
WRF	Weather Research and Forecasting
WRI	World Resources Institute
WRMD	Water Resource Management Division
WSC	Water Survey of Canada
YOY	Young of the Year
ZOI	Zone of Influence
µg	microgram
$µg/m^3$	micrograms per cubic metre
σ^2_m	Variation of Brownian Motion

Glossary

Term	Definition
100-year Storm	A storm whose intensity level has a one percent chance of occurring in any given year.
Acid Rock Drainage (ARD)	High pH water resulting from surface or groundwater contact and runoff from exposed and weathered rock.
Amerindian	A broad term sometimes used to refer to the indigenous inhabitants of North America, excepting the Arctic-adapted Inuit and Palaeo-Inuit peoples. In Newfoundland and Labrador, it may refer to the Maritime Archaic occupation, as well as to the Late Precontact and historic-period Beothuk, and the historic and contemporary Mi'kmaq people.
Anthropogenic	Resulting from the influence of humans on nature.
Avifauna	Bird species, including species at risk (SAR) and species of conservation concern (SOCC).
Bag Limit	A law imposed on hunters and anglers restricting the number of animals within a specific species that may be retained.
Baseline	Background, pre-activity, pre-construction, or pre-Project environmental conditions.
Beothuk	The Amerindian indigenous people of the island of Newfoundland at the time of contact. The Beothuk were the descendants of the Late Precontact Amerindian inhabitants of the island but by convention, archaeologists use the term Beothuk to refer specifically to people of the contact and historic periods.
Borden System	Archaeological sites in Canada are registered under a nationwide site registration system known as the Borden System, which assigns each site a unique Borden number. In Newfoundland and Labrador, the PAO assigns these numbers. Only true archaeological sites (those predating the mid-20th century) receive a Borden number.
Carnivore	An organism that eats animals.
Climate Change	A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer" (IPCC 2014).
CO_{2e} (carbon dioxide equivalent)	The result of the aggregation of greenhouse gases (GHG) which takes into account their respective global warming potentials.
Compensation	Mitigation means, in respect of a project, the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such compensation or any other means.
Cone of depression	An area of lowered groundwater levels resulting from a reduction in groundwater head at a centralized location
Contemporary	In reference to land use locations, a contemporary site is a location which contains the material remains of human land use in the recent past (by convention, post-dating the mid-20th century). Contemporary sites may be important in interpreting the history of human land use in a region, but are not considered true archaeological sites, and are not assigned numbers under the Borden System.

Term	Definition
Country Foods	Defined as all foods sourced outside of commercial food systems, including any food that is trapped, fished, hunted, harvested or grown for subsistence or medicinal purposes outside of the commercial food chain (some stakeholders also refer to this as “traditional foods”)
Critical Habitat	A habitat area essential to the conservation of a listed species.
Cumulative Effects	the environmental effects that are likely to result from a project in combination with other projects or activities that have been or will be carried out.
Dam	A barrier that impounds water or underground streams.
Dewatering	The act of pumping water out of a depression or pit to prevent it from filling with water.
Drainage Basin	The area of land from which surface water run-off drains into lakes, streams, reservoirs or other bodies of water.
Drawdown	The change in water level (between the static water level and the surface of the cone of depression) caused by pumping a groundwater well.
Ecological Land Classification	The diversion of land based on its ecological role in the environment.
Effluent	The water or waste water discharge from a containing space such as a treatment plant, industrial process or lagoon.
Electrofishing	Refers to a common technique used by fisheries scientist that uses direct electrical currents to attract and stun fish for collection.
Emission Factor	A representative value that relates the quantity of pollutant released to the atmosphere with an activity or input associated with the release of that pollutant.
Emissions	Technically, all solid, liquid, or gaseous discharges from a processing facility, but normally referring to gaseous and particulate air emissions (with solids referred to as residue and liquids as effluent).
Esker	A long ridge of gravel and other sediment, typically having a winding course, deposited by meltwater from a retreating glacier or ice sheet.
Fugitive Emission	Result from small leaks that while individually very small, can collectively be substantial for large, complex facilities
Geographic extent	The geographic area within which an environmental effect of a defined magnitude occurs.
Granivore	Feeding primarily on seeds and nuts
Headwater(s)	The upper area of a watershed most commonly first order watercourses that collect run-off from riparian areas. Commonly identified as the source or start of the watercourse.
Historic Site	In reference to archaeological sites in Newfoundland and Labrador, an historic site is one dating between the initial period of European contact with indigenous peoples (approximately 500 years ago) but before the mid-20th century.
Hydrometric Station	A location instrumented to monitor water levels and flow in a watercourse or waterbody.
in situ	A Latin term meaning in place or not removed. In general, this refers to artifacts being found in their originally deposited context.
Late Precontact	The final precontact Amerindian occupation of Newfoundland and Labrador, beginning approximately 2,000 years ago. The Late Precontact period arbitrarily ends at the time of European contact, approximately 500 years ago, but the same people continued to inhabit the Island of Newfoundland and were ancestral to the Beothuk.

Term	Definition
Maritime Archaic	The first major period in the Amerindian occupation of the province, dating approximately 8,000 to 3,700 years ago in Labrador, and from ca. 6,000 to 3,200 years ago on the Island.
Mass Balance	Accounting for all material entering and leaving a physical system or space.
Mi'kmaq	The Indigenous peoples of the Maritime Provinces in Canada, and indigenous inhabitants of the Island of Newfoundland in the contact and historic period
Milling	The first stage of mineral processing in which ore pieces from the mine are further mechanically reduced in size to maximize efficiency of the concentration process.
Mitigation	With respect to an undertaking, the elimination, reduction or control of the adverse effects or the significant environmental effects of the undertaking, and may include restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.
Monitoring	Periodic or continuous surveillance or testing to determine the characteristics of a substance or the level of compliance with statutory requirements and/or contaminant levels in various media or in humans, plants, and animals.
Omnivore	Feeding on both meat (animal) and plant tissues.
Open Pit	A form of operation designed to extract minerals that lie near the surface.
Palaeo-Inuit	A term referring to a series of occupations of Newfoundland and Labrador by Arctic-adapted peoples arriving from the north. Although also deriving from the north, the Palaeo-Inuit peoples were not directly ancestral to the later Inuit occupation.
Precipitate	The creation of a solid from a solution. The solid formed is a precipitate and will generally settle out of the solution.
Precontact	The period of indigenous occupation in Newfoundland and Labrador that occurred before significant contact with Europeans, approximately 500 years ago.
Provincial Archaeology Office	The office of the Government of Newfoundland and Labrador which regulates and oversees the protection of historic resources within the province.
Receptor	The person, plant or wildlife species that may be affected due to exposure to a contaminant.
Residual Effects	The effects of a project that remain after the application of mitigation
Sediment	Fragmented material from weathered rocks and organic material that is suspended in, transported by and eventually deposited by water or air.
Significance	A measure of the degree to which an environmental effect may be adverse or beneficial.
Sky Glow	Sky glow refers to the illumination of the clouds by light sources on the surface of the Earth, such as street lighting, and haze in the atmosphere that replaces the natural nighttime sky with a translucent to opaque lighted dome.
Sound Pressure Level	The logarithmic form of sound pressure. In air, 20 times the logarithm (to the base 10) of the ratio of the actual sound pressure to a reference sound pressure (which is 20 micropascals, and by convention has been selected to be equal to the approximate threshold of human hearing). It is also expressed by attachment of the word decibel to the number.
Tailings	The gangue and other refuse material resulting from the washing, concentration or treatment of ground ore.
Telemetry	The in situ collection of measurements or other data at remote points and their automatic transmission to receiving equipment for monitoring.

Term	Definition
Temporal Boundary	A restriction that is time dependent.
Waste Rock	Barren or submarginal rock or ore that has been mined, but is not of sufficient value to warrant treatment and is therefore removed ahead of the milling processes.
Wetlands	Wetlands are defined in the federal and provincial policies as land such as bogs, fens, marshes, swamps, and shallow waters that are permanently or temporarily submerged or saturated by water near the soil surface, for long enough that the area maintains aquatic processes.
Wigwam	A conical lodge constructed and used as a dwelling by the Beothuk in Newfoundland, and also by the Mi'kmaq.
Wildlife Habitat	Areas where wildlife live, and as selected by species to meet their nutritional and shelter needs.