GUIDELINES FOR THE PREPARATION OF

AN ENVIRONMENTAL IMPACT STATEMENT

PURSUANT TO THE

CANADIAN ENVIRONMENTAL ASSESSMENT ACT

for the

NEW PROSPERITY

GOLD-COPPER MINE PROJECT

March 2012

Prepared by:
Canadian Environmental Assessment Agency

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ABBREVIATIONS

ARD/ML	acid rock drainage / metal leaching
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CEAA	*Canadian Environmental Assessment Act*
DFO	Fisheries and Oceans Canada
EA	environmental assessment
EIS	environmental impact statement
EMPs	environmental management plans
EMS	environmental management system
GHG	greenhouse gases
HADD	harmful alteration, disruption and destruction
Km	kilometres
MDP	mine development plan
MMER	Metal Mining Effluent Regulations
NWPA	*Navigable Waters Protection Act*
PAG	potentially acid-generating
PM	particulate matter
QA/QC	quality assurance/quality control
SARA	*Species at Risk Act*
TSF	tailings storage facility
VEC	valued ecosystem component

PART 1: BACKGROUND

1.1 INTRODUCTION

The purpose of this document is to identify for Taseko Mines Limited (herein referred to as the Proponent or Taseko), the nature, scope and extent of the information and analysis that shall be addressed in the environmental impact statement (EIS) for its proposed New Prosperity Gold-Copper Mine project (herein referred to as the Project or New Prosperity).

1.1.1 Background

The Proponent proposes to develop and operate a gold and copper mine located approximately 125 km southwest of Williams Lake, British Columbia. The Project consists of an open pit mine development and a 70,000 tonne per day concentrator facility with an average annual production of 108 million pounds of copper and 247 thousand ounces of gold production over a 20 year mine life. The Project also includes support infrastructure, associated tailings and waste rock areas, a 125 km long power transmission line, an existing concentrate load-out facility near Macalister, British Columbia and existing access from Williams Lake with construction of 2.8 km of new mine road (Figure 1).

The Project is subject to review under the *Canadian Environmental Assessment Act* (CEAA) given the potential requirement for Fisheries and Oceans Canada (DFO), Transport Canada and Natural Resources Canada to issue permits, approvals, authorizations and/or licences pursuant to the *Fisheries Act*, the *Navigable Waters Protection Act* (NWPA) and the *Explosives Act* respectively.

A previously submitted project by Taseko, known as the Prosperity Gold-Copper Mine project (herein referred to as the previous project proposal), was subject to an environmental assessment review under British Columbia's *Environmental Assessment Act* and a federal review panel under the CEAA in 2009-2010.

The Government of British Columbia issued an environmental assessment certificate for the previous project proposal on January 14, 2010 concluding there would be significant adverse environmental effects on fish and fish habitat but that those significant effects were justifiable in the circumstances.

The federal review panel released its report in July 2010 and concluded that the Prosperity Gold-Copper Mine project as proposed would result in significant adverse environmental effects on fish and fish habitat, on navigation, on the current use of lands and resources for traditional purposes by First Nations and on cultural heritage, and on certain potential or established Aboriginal rights or title. Additionally, the panel determined that the project would result in a significant adverse environmental effect at the local level on the users of the meadows within the Teztan Yeqox (Fish Creek) watershed due to the loss of grazing lands, the Xeni Gwet'in/Sonny Lulua trapline at the mine site and the tourism business operated by Taseko Lake Outfitters. The panel also concluded that the Prosperity Gold-Copper Mine project, in combination with past, present and reasonably

foreseeable future projects would result in a significant adverse cumulative effect on grizzly bears in the South Chilcotin region and on fish and fish habitat.

In November 2010, in its response to the panel's report, the Government of Canada indicated that it accepted the conclusions of the panel as presented in its report, and, taking into consideration the report of the panel, implementation of any appropriate mitigation measures, and in weighing the socio-economic benefits and potential significant adverse environmental effects, determined that the significant adverse environmental effects could not be justified under the circumstances. In its response, the Government of Canada also noted that its decision did not preclude the Proponent from submitting a project proposal that addressed the factors considered by the panel.

Following the Government Response, Taseko undertook revisions to the mine development plan (MDP) and mine site layout to address the factors identified by the panel and submitted a project description for New Prosperity to the Canadian Environmental Assessment Agency (the Agency) for consideration. On August 9, 2011, the Agency accepted the project description, and on November 7, 2011, the Honourable Peter Kent, Minister of the Environment, announced that the Project would undergo a federal environmental assessment by way of a review panel (the Panel).

In his referral of the Project to a review panel, the Minister of the Environment instructed the Agency to design a process that will thoroughly assess whether the proposal addresses the environmental effects identified in the environmental assessment of the original Prosperity Gold-Copper Mine Project. He also directed the Agency to ensure that information obtained during the previous environmental assessment is used to the extent possible to ensure a timely decision and that the review take no more than 12 months.

The Project is also subject to the Major Resource Project Initiative led by the Major Projects Management Office, which works collaboratively with federal departments and agencies, and acts as a single window into the federal regulatory process.

1.1.2 Approach

The Project as proposed by the Proponent will be assessed by a review panel appointed by the Minister of the Environment to determine if the Project will result in significant adverse environmental effects once mitigation measures are applied. The review process will be informed by two sources of information. For aspects of the Project that have not changed from the previous project proposal, the assessment will be informed by information, submissions, testimony, findings and conclusions generated as part of the 2009/2010 review. For aspects of the Project that have changed or are new from the previous project proposal, information generated through the current assessment will inform the review process in relation to those components.

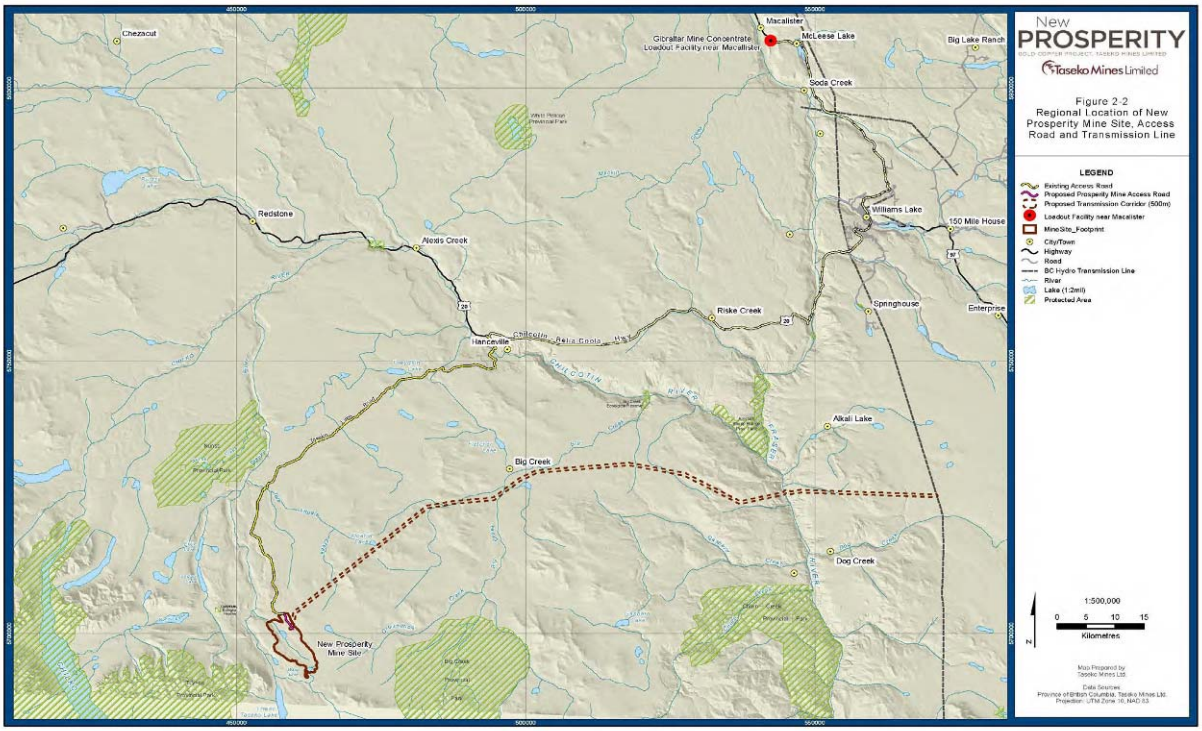

Figure 1: Project Location

The scope of the EIS Guidelines focuses on aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to the environmental effects previously predicted. These Guidelines also consider those components and activities associated with the Project that have not changed but may result in changes to the environmental effects determinations as part of the 2009/2010 review due to implementation of the new MDP and mitigation measures. The Proponent is expected to use relevant information generated as part of the 2009/2010 review and from its original EIS (2009) as appropriate in support of the assessment of its project proposal.

The Proponent will submit an EIS which focuses on:

- evaluating all environmental effects resulting from changes to on-site and off-site components and activities associated with the new MDP and reconfiguration of the mine site layout (including any situations not explicitly identified in these Guidelines);
- how previously identified as well as new mitigation measures will be applied;
- how previous commitments will be integrated;
- how recommendations from the July 2010 Panel Report have been considered; and
- the significance of any residual effects[1].

[1] Residual effects refer to those environmental effects of the Project that remain after the implementation of mitigation measures. The significance of environmental effects is only determined on the residual effects that remain after mitigation measures are implemented.

Updated data and analysis shall be provided, as required, when assessing the project proposal and changes that may occur as a result of the implementation of the new mitigation measures. It is the responsibility of the Proponent to provide sufficient data and analysis to supplement information provided as part of the 2009/2010 review to permit proper evaluation of the significance of adverse environmental effects for the Project as proposed.

1.2 GUIDING PRINCIPLES

1.2.1 Environmental Assessment as a Planning Tool

Environmental assessment (EA) 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 and to encourage decision makers to take actions that promote sustainable development and thereby achieve or maintain a healthy environment, healthy communities and a healthy economy.

The EA shall, in a manner consistent with those purposes, identify the possible environmental effects of the Project, propose measures to mitigate adverse effects, and assess whether there will be likely significant adverse environmental effects after mitigation measures are implemented.

1.2.2 Community Knowledge and Aboriginal Traditional Knowledge

For the purposes of these Guidelines, community and Aboriginal traditional knowledge should be understood to refer to knowledge acquired and accumulated by a community or Aboriginal community, through generations of living in close contact with nature.

Community and Aboriginal traditional knowledge, in combination with other information sources, assists in achieving an understanding of potential environmental effects of projects. Community and Aboriginal traditional knowledge may, for example, contribute to the description of the existing physical, biological and human environments, natural cycles, resource distribution and abundance, long- and short-term trends, and the use of lands and land and water resources. It may also assist with consideration of matters such as project siting and design, identification of issues, the evaluation of potential effects and their significance, the effectiveness of proposed mitigation, cumulative effects assessments and the consideration of follow-up and monitoring programs.

The Proponent shall incorporate into the EIS the community and Aboriginal traditional knowledge to which it has access or that is acquired through consultation activities and appropriate due diligence. The Proponent may facilitate the presentation of such knowledge by persons and parties having access to this information to the Panel during the course of the review.

1.2.3 Sustainable Development

Sustainable development, as defined in CEAA, means development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. In addition, environmental assessment provides an effective means of integrating

environmental factors into the planning and decision-making process in a manner that promotes sustainable development.

In compiling information for the EIS, the Proponent shall demonstrate how the Project, including the alternatives means of carrying out the Project, takes into account the relations and interactions among the various components of the ecosystems, including the extent to which biological diversity may be affected by the Project, and how it meets the needs of the present as well as future populations.

1.2.4 Precautionary Principle

One of the purposes of CEAA is to ensure that projects are considered in a careful and precautionary manner before authorities take a course of action in connection with them, in order to avoid or mitigate significant adverse environmental effects. The precautionary principle is relevant to this purpose. In situations where scientific knowledge is incomplete, but there is a threat of serious adverse consequences, the lack of full certainty or harm shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

The Government of Canada document *A Framework for the Application of Precaution in Science-based Decision Making About Risk* (2003) sets out guiding principles for the application of precaution to science-based decision making in areas of federal regulatory activity for the protection of health and safety and the environment and the conservation of natural resources. This framework shall be considered and referred to where applicable in preparing those aspects of the EIS that will address how certainty regarding environmental effects has influenced the identification of mitigations.

The Proponent shall indicate how the precautionary principle was applied or considered in the assessment of the Project. In determining whether the Project is likely to cause significant adverse environmental effects, the Proponent shall:

- demonstrate that all aspects of the Project have been examined and planned in a careful and precautionary manner in order to ensure that they do not cause serious or irreversible damage to the environment 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 taken to minimize these effects;
- evaluate alternative means of carrying out the Project and compare 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;
- 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;

- discuss how the design of monitoring programs will ensure rapid response and correction where adverse effects are detected; and
- present public views on the acceptability of all of the above.

1.3 PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL IMPACT STATEMENT

The Proponent shall prepare an EIS that will assess the potential environmental effects of the Project and identify the significance of adverse residual effects. While the focus of the EIS will be on environmental effects associated with those aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to the environmental effects previously predicted, it is important that these aspects are assessed in relation to components and activities associated with the Project that have not changed.

The EIS shall:

- evaluate the potential environmental effects of the Project, including residual effects after the implementation of mitigation measures;
- assess whether the components and activities of the Project that have changed from the previous project proposal will result in significant adverse environmental effects, including cumulative environmental effects;
- assess potential environmental effects of new project components and activities that have not been previously assessed and propose mitigation measures to alleviate any potential effects;
- describe changes to previously predicted environmental effects that may occur as a result of the implementation of the new MDP and mitigation measures;
- identify how the Project as proposed addresses the significant adverse environmental effects that were identified in the previous project proposal;
- make use of existing relevant information generated as part of the 2009/2010 review process, to the extent possible; and
- identify how commitments, mitigation measures and recommendations made as part of the 2009/2010 provincial and federal review will be incorporated into the Project design.

1.3.1 Study Strategy and Methodology

These Guidelines outline the minimum information requirements while providing the Proponent some flexibility in selecting methods to compile and present data for the EIS. It is the responsibility of the Proponent to provide sufficient data and analysis on any potential environmental effects to permit proper evaluation of the Project.

The Proponent is expected to observe the intent of the EIS Guidelines and to provide sufficient information to identify all environmental effects that are likely to arise from the Project, using information from the 2009/2010 review as appropriate. The assessment shall focus on how environmental effects resulting from changes to on-site and off-site

components and activities associated with the new MDP and reconfiguration of the mine site layout, how previously identified as well as new mitigation measures will be applied, how previous commitments will be integrated, how recommendations from the July 2010 Panel Report have been considered, and the significance of any residual effects.

It is possible that the EIS Guidelines may include matters that, in the judgement of the Proponent, are not relevant or significant to the Project. If such matters are omitted from the EIS, they shall be clearly indicated with appropriate justification so that Aboriginal groups, the public and other interested parties have an opportunity to comment on this judgement. The Proponent may be required to provide additional information should the Panel disagree with the Proponent's decision to omit certain information.

In assessing the environmental effects of the Project, it is essential to explain how the Project addresses the findings of the previous panel regarding significant adverse environmental effects, in particular, effects on:

- Aboriginal rights or title;
- current use of lands and resources for traditional purposes by First Nations and on cultural heritage resources;
- fish and fish habitat in the Project area;
- users of the meadows within Teztan Yeqoz (Fish Creek) watershed;
- Xeni Gwet'in/Sonny Lulua trapline;
- Taseko Lake Outfitters tourism business
- navigation; and
- cumulative effects on the Southern Chilcotin grizzly bear population and on fish and fish habitat.

The Proponent shall document how it used scientific, engineering, and community and Aboriginal traditional knowledge to reach its conclusions. Assumptions shall 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 shall be specified. The risk of error, uncertainty, reliability and sensitivity of data and models used to reach conclusions will be indicated.

It is expected that the new components of the Project and their interaction with those elements and features of the Project that have not changed from the previous project proposal will be subject to additional technical studies and inventories. The Proponent shall incorporate any studies that have been completed in the area since the 2009/2010 review and updates to existing information shall be provided. The Proponent shall provide in its EIS, as appendices if necessary, copies of all technical studies, inventories or other supporting technical documents relied on by the Proponent in the EIS. If pre-existing studies, inventories or other technical documents are referred to or relied upon in the EIS, then the Proponent shall also provide such documents as part of its EIS.

The EIS shall identify any significant gaps in knowledge and understanding relevant to conclusions presented in the EIS. The steps that have been taken by the Proponent to address or minimize these gaps will also be identified. Where the conclusions drawn from

scientific and technical knowledge are inconsistent with the conclusions drawn from available community and Aboriginal traditional knowledge, the EIS shall contain a balanced presentation of the issues and a statement of the Proponent's conclusions.

1.4 OUTLINE OF THE ENVIRONMENTAL IMPACT STATEMENT

At a minimum, the EIS shall include the components outlined in the subsections below.

1.4.1 Preface

The EIS shall include a preface that indicates why the document is being prepared and how it has been developed. It will indicate that the Project is subject to review by the Government of Canada pursuant to the *Canadian Environmental Assessment Act*, SC 1992, c.37. It will identify the parties involved in developing the EIS.

1.4.2 Acknowledgements

The EIS will identify all the consultants involved in preparing the EIS and provide their professional qualifications/designations.

1.4.3 Executive Summary

The EIS will contain an Executive Summary, produced as a stand-alone document, describing the environmental effects of the Project and the proposed environmental management and mitigation measures. The Executive Summary will contain the following information:

- a concise description of all key components of the Project including Project components and activities that have changed or are new from the 2009/2010 project proposal as well as those that remain unchanged;
- a description of any changes to previously identified environmental effects that may occur as a result of the implementation of the new MDP and mitigation measures;
- a succinct description of the consultation conducted with Aboriginal groups, the public and government agencies since the 2009/2010 Project review, with a summary of the issues raised and solutions found and/or suggested during these consultations;
- a general overview of the key environmental effects of the new MDP and proposed mitigation measures and follow-up programs; and
- the Proponent's conclusions and significance determinations from the assessment.

1.4.4 Abbreviations

A list of abbreviations and glossary of terms will be included in the EIS. The Proponent is encouraged to minimize the use of abbreviations to the extent possible.

1.4.5 Organization of the EIS

To facilitate the identification of the documents submitted and their coding in the Canadian Environmental Assessment Registry, the title page of the EIS and its related documents shall 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.

The EIS shall specify the organization of the document. This shall include a list of all tables, figures, and photographs referenced in the text of the EIS. A complete list of supporting literature and references will be provided.

The Proponent shall present the EIS in a clear and direct manner to make the issues comprehensible to as wide an audience as possible. The Proponent will avoid scientific/technical jargon to the extent possible. The Proponent shall provide charts, diagrams, tables, maps and photographs, where appropriate, to clarify the text. Perspective drawings that clearly convey the various components of the Project shall also be provided. Wherever possible, maps shall be presented in common scales and datum to allow for overlay and comparison of mapped features.

The contents of the EIS will include the information outlined in Part 2 of these Guidelines.

The Proponent shall avoid repetition by describing, for each valued ecosystem component (VEC)[2], the Project setting, the anticipated effects on the VEC, the proposed mitigation measures, the significance of residual effects, and where relevant, the proposed compensation, in the same section of the EIS. Assessment of cumulative effects shall be provided as a stand-alone section.

To avoid repetition, the EIS may make reference to information that has already been presented in other sections of the document through cross-referencing. Detailed studies shall be provided in separate appendices and shall be referenced by appendix, section and page in the text of the main document of the EIS.

The Proponent shall ensure that the EIS is organized and presented in a logical manner that enables the reader to easily follow the analysis of the components of the Project that have changed or are new and the corresponding changes to the environmental effects previously predicted. All information relevant to the Project in satisfying these Guidelines shall be included in the EIS including, to the extent possible, information generated as part of the 2009/2010 review (information, submissions, testimony, findings and conclusions). When relying on previously referenced information to meet the requirements of the EIS Guidelines, the Proponent shall include the information directly in the EIS along with an explanation of why that information can be used to assess the effects of the components of the Project that have changed or are new and the corresponding changes to the environmental effects previously predicted. For instance:

[2] Valued ecosystem components refer to the environmental element of an ecosystem that is identified as having scientific, ecological, social, cultural, economic, historical, archaeological or aesthetic importance. The value of an ecosystem component may be determined on the basis of cultural significance or scientific concern. Valued ecosystem components that have the potential to interact with Project components shall be included in the assessment of environmental effects.

- assumptions shall be clearly identified and justified;
- 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 shall be substantiated; and,
- the studies shall be prepared using best available information and scientifically defensible methods, to the highest standards in the relevant subject area.

To facilitate the access of information on the Project as a whole for reviewers, including components of the Project that have not changed, the information from the 2009/2010 Prosperity Gold-Copper Mine project is available on the Canadian Environmental Assessment Registry Information Site: http://www.ceaa-acee.gc.ca/050/Viewer_e.cfm?CEAR_ID=44811.

1.5 USE OF CONFIDENTIAL INFORMATION

The EIS submitted by the Proponent shall not contain:

- information that would reasonably be expected to cause specific, direct and substantial harm to the Proponent, to a witness, or specific harm to the environment (ecologically or culturally significant sites, species of conservation concern[3], etc.) by its disclosure;
- information that is confidential (i.e., financial, commercial, scientific, technical, personal or other nature), that is treated consistently as confidential, and the person affected has not consented to the disclosure; or
- information that is likely to endanger the life, liberty or security of a person through its disclosure.

The Proponent must inform the Agency in writing before the submission of the draft EIS for a determination as to whether specific information requested by these guidelines shall be submitted to, and retained by the Panel, as confidential.

1.6 TABLE OF CONCORDANCE

The EIS will include a Table of Concordance which cross-references the information presented in the EIS (including appendices and reference material) with the information requirements identified in the EIS Guidelines.

[3] Species of conservation concern includes Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed species or species listed under the federal *Species at Rick Act* or species listed under the *Wildlife Act*, 2004, in British Columbia.

PART 2: CONTENTS OF THE ENVIRONMENTAL IMPACT STATEMENT

2.1 INTRODUCTION AND BACKGROUND

The EIS will include an introduction that orients the reader by briefly describing the geographic setting, the Project, the underlying need for the Project, the Proponent, the federal review process and the content, organization and format of the EIS.

2.1.1 The Proponent

The EIS will describe the Proponent by providing pertinent corporate information, including the following:

- contact information (i.e., name, address, phone, fax, email etc.);
- history of the Proponent;
- the name of the legal entity that would develop, manage and operate the Project;
- an explanation of corporate and management structures, as well as insurance and liability management related to the Project;
- the mechanism used to ensure that corporate policies will be implemented and respected for the Project;
- a description of the Proponent's record of performance pertaining to environmental and socio-economic issues in past and ongoing operations;
- the policies with regard to Aboriginal consultation, procurement, community engagement, hiring and corporate social responsibility; and
- key personnel, consultants, contractors, and/or sub-contractors responsible for preparing the EIS, where available.

The EIS will provide information on the nature of the Proponent's management structure and organizational accountability for:

- the design, construction, operation, modification, closure and decommissioning of the Project;
- the implementation of Environmental Management Systems (EMS) and Environmental Management Plans (EMPs), mitigation and monitoring; and
- key elements of the environmental and health and safety management systems and how the systems will be integrated into the Project.

2.1.2 Legal Framework and Role of Government

To understand the context of this EA, this section in the EIS shall:

- identify the government bodies involved in the EA;

- identify the planning context for the EA of the Project, including government policies, regulations, and land use plans (e.g. Cariboo Chilcotin Land Use Plan) that have a bearing on the Project;
- identify the local government(s) and applicable official community plans of communities potentially affected by the Project;
- identify why the requirements of the CEAA apply;
- identify provincial and federal legislation, agreements, conventions and key policies and/or guidelines applicable to the Project; and
- identify regulatory approvals that may be required for the Project and which of those approvals, if any, will be requested for concurrent review with the EIS.

A table summarizing the regulatory requirements of the Project shall be provided as an appendix to the EIS[4]. Further, the EIS will summarize and discuss the approach, including the role of regulatory bodies, to ensure compliance with existing federal and provincial environmental legislation applicable to the Project.

Appendix A includes a listing of some of the relevant federal and provincial statutes, policies and strategies which are likely to apply to the Project. The Proponent is encouraged to contact the various federal and provincial departments involved in the review of the Project to acquire information regarding potential requirements for permits/authorizations and to assist in meeting the environmental legislative obligations of federal departments and provincial ministries.

2.2 PROJECT DESCRIPTION

2.2.1 Need for and Purpose of the Project

The “need for” and “purpose of” the Project shall be established from the perspective of the Proponent and provide the context for the consideration of alternatives.

The Proponent shall clearly describe the need for and function of the Project. This description shall define the problem or opportunity the Project is intending to solve or satisfy. In this context, the EIS will present justification for proceeding with the development at this time within the context of local, regional, provincial and national economies, as well as global implications of supply and demand on metal prices and markets.

The Proponent is required to clearly describe the purpose of the Project by defining what is to be achieved by carrying out the Project. In addition, the purpose of each of the Project components and activities and their relevance to the overall mine development plan will also be discussed.

[4] This table shall include the name of the issuing department/ministry, the pertinent act/regulation, and specific permit/authorization/approval required, and the relationship of the regulatory requirement to the Project.

2.2.2 Project Setting

The EIS will include a concise description of the geographic setting in which the Project is proposed to take place and will include site, regional, watershed, bathymetric maps and land use maps. The following shall be considered for each map type:

- Site map - shall be to an appropriate scale and show all relevant features of the mine site and the existing landscape (e.g., tailings pond, waste rock storage area, ore/low grade ore stockpile, millsite area, all buildings, access roads, staging areas, lay downs and power lines etc.);
- Regional map - two shall be provided, one to 1:100 000 scale and a second to a 1:50000 scale;
- Watershed map - shall be appropriately scaled and show proposed discharge baseline and sampling locations;
- Bathymetric maps - shall be provided for potentially impacted and reference lakes; and
- Land Use maps – depicting municipal boundaries, mining tenure, claims and leases, Crown land tenure, private land tenure and land use designations.

In addition to the requested maps, in order to illustrate the regional setting and clearly locate the Project within that setting, the EIS shall include site plans at the appropriate scale and photographs (as necessary).

The description of the Project setting shall be focused on those aspects of the environment important for understanding the potential environmental effects of those components and activities associated with the new MDP. This description shall integrate the natural and human elements of the environment in order to explain the interrelationships between the physical and biological aspects and the people and their communities. This description may include the following information:

- main environmental constraints;
- any existing designated environmentally sensitive areas, such as national, provincial and regional parks, ecological reserves, designated fisheries areas, wetlands, estuaries, and habitats of provincial or federally listed species at risk, and other sensitive areas;
- physical or cultural heritage resources;
- the current land use in the area and the relationship of the Project components and activities with any existing land use in the area including resource development, fishing, recreational use and registered hunting, trapping and guiding areas;
- regional and/or local planning or policy frameworks that relate to the protection of the environment (e.g. Cariboo Chilcotin Land Use Plan, Integrated Resource Management Zone)
- local communities, including Aboriginal communities, their uses of land and resources for traditional purposes and any land claims or legal cases; and
- the environmental significance and value of the surrounding area.

2.2.3 Project Description

The Project as proposed would involve a large open pit mine development with a 20 year operating life. Typical large-scale open pit mining equipment and conventional copper porphyry flotation processing would be used. In addition to the mine and associated tailings storage facility (TSF) and ore/low grade ore and waste rock storage areas, the Project includes development of an onsite mill and support infrastructure, a 125 km long power transmission line, a 2.8 km mine access road to connect to existing logging roads and highways and transport of concentrate to the existing Gibraltar Mine Concentrate Load-out Facility near Macalister, 54 km north of Williams Lake.

For those aspects of the Project that have changed or are new from the previous project proposal, the EIS shall describe:

- the general layout of the components and activities associated with the new MDP;
- the location of waste rock stockpiles, TSF, overburden stockpile, ore/low grade ore stockpile and other supporting facilities;
- how components and activities of the previous project proposal may change due to the reconfiguration of the mine site as a result of the new MDP; and
- components and activities of the Project that have changed due to the implementation of proposed commitments or recommendations made as part of the provincial and federal 2009/2010 review process.

The EIS shall contain sufficient detail to be able to identify which components are likely to have a high failure consequence during construction, operation, closure and post-closure and where monitoring efforts will be required for the purposes of risk analysis.

In describing the Project, the Proponent shall consider relevant recommendations in the *Environmental Code of Practice for Metal Mines*, published by Environment Canada (2009). 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. The Code is available at http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=CBE3CD59-1.

The EIS will describe the Project as it is planned to proceed, including project phases and activities (construction, operation, modification (if relevant), closure, post-closure, decommissioning and abandonment (if relevant)) [5] as described in the New Prosperity Gold - Copper Mine Project – Project Description (August 2011). This information will be provided in sufficient detail to support the Proponent's assessment of potential environmental effects. The description will include an estimated timeline for all phases of the Project.

[5] The terminology "closure" and "post-closure" is used throughout the EIS Guidelines. However, it is recognized that decommissioning or abandonment activities could occur at any Project phase, in an early closure scenario.

For those aspects of the Project that have changed or are new from the previous Project proposal, the description of project phases may include, but not be limited to, the following activities as appropriate or applicable:

Site Preparation

- clearing, grubbing and stripping of vegetation, topsoil and other organic material;
- excavating and pre-stripping to remove mine rock and overburden;
- site preparation for ore/low grade ore and waste rock management;
- management of surface water and groundwater on the site, including seepage and run-off;
- maintenance and management of mine rock and overburden stockpiles (including run-off and seepage) to protect groundwater and surface water quality; and
- monitoring of groundwater and surface water quality and quantity.

Construction

- construction of tailings containment dams;
- management of surface water and groundwater on the site, including seepage, run-off, and mill process water;
- maintenance and management of mine rock stockpiles, the tailings storage facility (TSF), and the process water pond (including run-off and seepage);
- monitoring of groundwater and surface water quality and quantity;
- construction of water management facilities and drainage works (including but not limited to pipelines, dewatering facilities, storm water management, polishing ponds, and sediment control ponds and mine process water reservoirs);
- dewatering of natural water bodies in the project area;
- construction of new mine site access and haul roads including any water crossings, and water body shoreline works or undertakings;
- aggregate sources and amounts required for construction purposes;
- management of domestic waste; and
- fish compensation works.

Operation

- mining activities and management and maintenance of the entire mine waste stream, including but not limited to, tailings, waste rock, overburden, ore/low grade ore, and process water pond;
- dewatering activities (e.g. open pit);
- management of surface water and groundwater on the site; including seepage, run-off, mill process water and storm water;
- management of domestic waste from the workers camp; and
- monitoring activities.

Closure
The closure phase of the Project will include the following:

- decommissioning of the potable water and sewage treatment systems (e.g., settling ponds associated with mine rock storage, roads and plant site);
- management of surface water on site during decommissioning;
- maintenance and management of mine rock stockpiles, overburden stockpiles, ore/low grade ore stockpiles and the TSF (including runoff and seepage);
- plans for soil, groundwater, and surface water testing for residual contamination, and disposal of contaminated soils and treatment of groundwater and surface water, as required;
- plans for reclamation and restoration of landscape (including water bodies) to productive capacity including management and monitoring;
- management of the flooded open pit to protect groundwater and surface water quality during flooding and pit overflow;
- installation of closure spillways and management of tailing facility surface and groundwater flows; and
- adaptive management, follow-up, compliance and effects monitoring.

Post-closure
The post-closure phase will include any necessary monitoring, maintenance and follow-up programs that will be undertaken (e.g. embankment structures, water quality, vegetation etc).

All phases
In order to facilitate the review of information associated with design elements and features that have not changed from the previous project proposal the Proponent shall identify and describe these features for all phases of the Project, such as:

- drilling and blasting to develop the open pit and plant site area;
- preparation of construction surfaces and installation of temporary construction facilities;
- management of domestic waste;
- any works or undertakings associated with upgrading a rail load-out facility for mine concentrate;
- upgrading of the existing mine access road(s) and entrance(s) to the project area including any water crossings and water body shoreline works or undertakings;
- construction of a 125 km electrical transmission line and substation;
- upgrading of the road from Hanceville to the junction of the 4500 logging road and 20 kilometres of the 4500 road;
- construction of 2.8 km access road to the mine site from the existing 4500 logging road;

- construction of administration buildings, storage buildings, other ancillary structures and site services such as parking lots, area fencing, security systems;
- construction of explosives factory and magazine facilities;
- transport of ore by overland conveyor to a coarse ore/low grade ore stockpile reclaim pad adjacent to the mill;
- conveyance of crushed ore to the grinding circuit by a series of apron feeders located in a concrete reclaim tunnel;
- conventional mill process consisting of conventional SAG and ball mill grinding, bulk sulphide flotation, regrind and bulk rougher/scavenger cleaner flotation, and concentrate dewatering;
- loading of concentrate filter cake from the pressure filter into bulk concentrate highway transport trailers;
- transport of concentrate to the existing Gibraltar Mine rail load out facility near Macalister, north of Williams Lake;
- drilling, blasting, loading of mine rock from the pit to mine rock storage areas and the ore to the crusher;
- operation of explosives factory and magazine facilities;
- environmental safety procedures;
- decommissioning of the temporary process water pond (proposed during mine operations), including removal or breaching of dams;
- management of hazardous waste;
- handling, transportation, storage, use, and disposal of explosives;
- transportation of crushed run-of-mine material;
- transportation of mill feed (ore) to the grinding section of the processing facility;
- mill processing;
- transportation of filtered concentrate;
- management of inputs from groundwater and surface water run-off into pits;
- decommissioning, dismantling and/or disposal of equipment;
- demolition/removal of surface buildings and associated infrastructure and disposal of resulting rubble;
- decommissioning/removal of explosives factory and magazine facilities; and
- removal of power lines and electrical equipment.

The Proponent shall also provide any additional documentation that may be required to support its arguments.

2.2.4 Mine Plan

The EIS shall include:

- an accounting of the defined mineral resource, including measured, indicated and inferred categories;

- the volume to be mined and associated grades and cut-off grades;
- the results of geological, geotechnical, hydrogeological and hydrological site investigations, particularly for the location of the mine rock storage area, tailings impoundment, ore/low grade ore stockpile, temporary stockpiles and process water;
- as appropriate, the results for geotechnical site investigations for any other mine site infrastructure (other than those listed above) requiring either shallow or deep foundation systems (such as mill foundation);
- a clear description of the extent of work planned including mineable amounts, grades and expansion limits; and
- a graphic representation of the progression of facility development (open pit, tailings impoundment, ore/low grade ore and waste rock storage areas etc.) at various mine life stages and proximity to Fish Lake at each stage.

2.2.5 Mine Development

Where known, the sequence and scheduling of mine development shall be provided, including but not limited to the following components:

- open pit development plan including location, design and production scheduling;
- pit wall management;
- mine rock storage area development plan;
- identification, segregation and management of acid rock drainage / metal leaching (ARD/ML) rock;
- ore/low grade ore stockpile;
- concentrate stockpile;
- overburden storage;
- topsoil storage for reclamation;
- surface and groundwater management activities and facilities (e.g., storm water management ponds, sedimentation ponds, tailings ponds, dam at the outlet of Fish Lake, etc.);
- mine rock storage areas and the TSF plan including tailings embankments which will identify location, preliminary designs, preliminary data on geotechnical properties and foundation conditions, seepage and surface water controls. The location and design of major structures will be based on geotechnical investigation and evaluation of foundation condition. Details concerning how these mine components will be maintained throughout all phases shall be provided;
- borrow sources for dam construction and site preparation;
- condemnation assessment in areas of proposed permanent mine facilities;
- construction materials of sufficient quality and quantity for impoundments; and
- contingency plans in the event of early permanent or temporary mine closure.

2.2.5.1 Process Plant

The EIS will describe the process plant, including but not limited to the following components:

- ore storage for the mill and low grade ore;
- tailings characterization;
- concentrate slurry handling, storage and pumping facility;
- the TSF with pipeline and reclaim water facilities;
- process water storage reservoir, intakes pipelines and distribution;
- plant runoff and sedimentation control facilities;
- dust management and fugitive emissions;
- spill contingency plans; and
- water balance along with methods to ensure appropriate water sources and a discussion of contingencies should water quantities not be available for drought or seasonal reasons. Appropriateness may be determined by evaluating the environmental effects of various water-taking options.

Furthermore, the EIS shall describe any waste water management initiatives to be undertaken by the Proponent with respect to the process plant.

2.2.5.2 Maintenance, Administration and On-Site Support Facilities

The EIS shall describe ancillary facilities and operations required at the mine site to support the mining of the ore body. The description shall include, but is not limited to the following:

- surface water diversion, collection or storage works (water balances);
- pumping systems and any pipelines; and
- all water supply requirements (e.g., source, volumes, temporal usage).

Maps, cross sections and preliminary design drawings at appropriate scales and reports shall be provided to illustrate the descriptions of changed and unchanged components of the Project.

2.2.6 Project Development Schedule

The EIS will provide an estimated timetable and schedule for construction to reach commercial production, operation and decommissioning.

2.3 PROJECT SCOPING

2.3.1 Scope of the Project

The scope of project includes all components of the Project as proposed by the Proponent. This Project involves the establishment and operation of an open pit mine and mill for the purpose of extracting and processing ore containing gold and copper over a period of 20 years and including, but not limited to, any ancillary activities and the activities outlined below:

- the construction and/or use of equipment, buildings and structures;
- the establishment, construction and operation of the TSF, explosives factory and magazine facilities, overburden, waste rock and ore/low grade ore storage areas, water management facilities, transmission lines, temporary and emergency generation facilities, and activities to mitigate environmental impacts;
- the decommissioning, closure and abandonment of the mine and mine-related infrastructure; and
- the establishment, construction and/or modification and use of transportation infrastructure including access roads, highways and/or rail lines to support the above-mentioned activities and the transport of final mine concentrate(s).

2.3.2 Scope of Assessment

The scope of the assessment shall focus on changes to on-site and off-site components and activities associated with the new MDP and reconfiguration of the mine site layout. The assessment will also consider those components and activities associated with the Project that have not changed but may result in changes to the environmental effects determinations as part of the 2009/2010 review due to implementation of the new MDP and mitigation measures. The assessment will include factors as described in Section 2.3.3 below.

2.3.3 Factors to be Considered

The factors to be considered in the EIS shall include those that are required under subsection 16(1) and 16(2) of the CEAA. The Proponent will therefore include a consideration of the following factors in the EIS:

- the 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 projects or activities that have been or will be carried out;
- the significance of the environmental effects referred to in the above paragraph;
- comments from the public and Aboriginal groups that are received during the review;
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the Project;
- the need for the Project and alternatives to 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;
- the need for, and the requirements of any follow-up program in respect of the Project; and
- the capacity of renewable resources which are likely to be significantly affected by the Project to meet the needs of the present and those of the future.

As per section16.1 of the CEAA the Proponent shall consider community and Aboriginal traditional knowledge in conducting its environmental assessment.

2.3.4 Scope of the Factors

Scoping establishes the boundaries of the EA and focuses the assessment on relevant issues and concerns. By defining the spatial and temporal boundaries, a frame of reference for identifying and assessing the environmental effects associated with the Project will be established. Different boundaries may be appropriate for each VEC.

The effects analysis shall consider the magnitude, aerial extent, duration, frequency and reversibility of residual effects. The analysis shall consider both the cumulative effects and assimilative capacity of the receiving environment. The likelihood of the occurrence of effects shall be assessed separately.

The Proponent is expected to continue working with review agencies during development of the EIS to discuss and further clarify the methodology to be used.

2.3.5 Valued Ecosystem Components

A valued ecosystem component (VEC) relates to an environmental component of an ecosystem that has scientific, social, economic, cultural and ecological, historical, archaeological or aesthetic value placed on it by humans.

A detailed discussion shall be provided for the following environmental components and their related sub-components from which VECs shall be identified and assessed by the Proponent:

- Atmospheric environment including:
  - Climate change;
- Acoustic environment;
- Aquatic environment including:
  - water quality and quantity,
  - hydrology and hydrogeology,
  - water temperature,
  - fish and fish habitat (as defined by the *Fisheries Act*), and
  - aquatic ecosystems, including benthos and sediment quality, federally and provincially listed species at risk, and species of Aboriginal importance including salmon populations and rainbow trout;
- Terrestrial environment including:
  - geology and geochemistry,
  - terrain and soils,
  - vegetation, including country food (e.g. wild game, fish, berries, plants), old growth forests and wetlands, and
  - wildlife and wildlife habitat including avifauna, migratory birds, federally and provincially listed species at risk, red- and blue-listed ecological communities, and species of Aboriginal importance, with particular attention to grizzly bear;

- Socio-economic environment including:
  - community services, infrastructure and population,
  - resource uses,
  - navigable waters, and
  - human health ;
- Physical and cultural heritage resources including:
  - archaeology;
- Aboriginal interests including:
  - Aboriginal communities,
  - current use of lands and resources for traditional purposes,
  - archaeology resources, and
  - potential or established Aboriginal rights or title.

The EIS shall explain and justify methods used to predict the effects of the Project on each VEC identified by the Proponent. At a minimum, the VECs in the assessment of the previous project shall be reassessed for aspects of the Project that have changed or are new from the previous project proposal. The information presented shall be substantiated by describing how the VECs were selected and what methods were used to predict and assess the adverse environmental effects of the Project on these components. The spatial and temporal boundaries used in the assessment may vary depending on the VEC. For example, with respect to grizzly bear, the spatial and temporal boundaries shall be broad enough to enable assessment of effects of the Project on site specific grizzly bear habitat and on overall population level effects in the area.

This list of VECs shall be modified as appropriate by the Proponent, as a result of consultation undertaken with Aboriginal groups, the public, federal and provincial government departments and other relevant stakeholders.

2.3.6 Spatial Boundaries

A description of the boundaries of the Project in a regional context showing existing and planned future land use, current and proposed resource development projects, and current infrastructure (i.e. transportation routes, urban areas, and proposed improvements to these infrastructure) shall be provided. The boundaries of the Project shall be broad enough to include any area that may be potentially impacted by the Project. The EIS shall include a description of the traditional land use and any potential or established Aboriginal rights or title associated with potentially affected Aboriginal groups.

Sensitive areas including national and provincial parks, wetlands, and critical habitats as defined under the *Species at Risk Act* (SARA) and archaeological sites found within the regional context shall be described. General habitat description or habitat regulations as defined under the British Columbia *Wildlife Act*, 2004 and preliminary grizzly bear

population ranges as identified through the Identified Wildlife Management Strategy shall also be described.

For those aspects of the Project that have not changed, the study area for the EA shall be based on the local and regional boundaries utilized in the 2009/2010 review. New local and regional boundaries for those aspects of the Project that have changed or are new from the previous project proposal may need to be defined and shall be based on the extent of the potential effects of the Project. Boundaries shall encompass:

- the immediate mine site;
- those specific areas in which the direct and indirect effects of the Project may be felt; and
- a wider area for comparison purposes when assessing the significance of those effects.

In determining the spatial boundaries to be used in assessing the potential adverse and beneficial environmental effects, the Proponent shall consider, but not be limited to, the following criteria:

- the physical extent of the Project, including any facilities or activities that may be affected by project components and activities that have changed from the previous project proposal as well as new project components and activities;
- the extent of cultural heritage resources that may be affected by the Project;
- the extent of aquatic and terrestrial ecosystems potentially affected by the Project;
- the extent of potential effects arising from noise, light and atmospheric emissions for those project components and activities that have changed from the previous project proposal as well as new Project components and activities. In assessing the effects of the Project on the atmospheric and acoustic environment, the Proponent shall consider not only the location of potential receptors, but also property lines and other such designations (e.g. land use permit boundaries that are currently zoned for or can otherwise be utilized by sensitive receptors);
- the extent to which species of conservation concern potentially affected by the Project utilize the landscape;
- the extent to which traditional land use, potential or established Aboriginal rights or title could potentially be affected by the Project;
- lands used for residential, commercial, industrial, recreational, cultural, and aesthetic purposes by communities whose areas include the physical extent of the Project; and
- the size, nature and location of past, present and reasonably foreseeable projects and activities which could interact with the items above including any on-going exploration.

These boundaries shall also indicate the range of appropriate scales at which particular baseline descriptions and the assessment of environmental effects are presented. The Proponent is not required to provide a comprehensive baseline description of the

environment at each scale, but shall provide sufficient detail to address the relevant environmental effects of the Project and the alternative means. The EIS shall contain a justification and rationale for all boundaries and scales chosen.

The geographic study areas for the EIS shall encompass the areas that can reasonably be expected to be affected by the Project or which may be relevant to the assessment of cumulative environmental effects. Study areas shall encompass all relevant components of the environment, including people, non-human biota, land, water, air and other aspects of the natural and human environment, notably, traditional land use. Study boundaries shall be defined taking into account traditional knowledge, ecological, technical, social and political considerations.

2.3.7 Temporal Boundaries

The temporal boundaries of the Project shall cover all phases of the Project as well as decommissioning, abandonment and post-closure reclamation of the sites affected by the Project. If the Proponent does not believe the full temporal boundaries shall be used, the EIS shall identify the boundaries used and provide a rationale for the temporal boundaries selected.

In characterizing the environmental effects of the Project, the Proponent shall consider the current baseline environment and environmental trends within the study area. The description of the existing baseline and the environmental trends shall include a consideration of past projects and activities carried out by the Proponent and/or others within the regional study area.

In assessing cumulative environmental effects within the study area, the Proponent shall consider the effects of the Project in combination with other past, present and future projects that are either “certain” or “reasonably foreseeable” as defined in the Agency’s guidance *Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act* (2007).

As is the case for the determination of spatial boundaries, the temporal boundaries shall indicate the range of appropriate scales at which particular baseline descriptions and the assessment of environmental effects are presented.

The approach taken to determine the temporal boundary of assessment shall take into account the following elements:

- hazardous lifetime of the contaminants associated with waste or with releases to the environment during both normal operation and postulated accidents and malfunctions;
- duration of the operational period;
- design life of engineered design elements;
- duration of both active and passive controls;

- frequency and duration of natural events and human-induced environmental changes (e.g., seismic occurrence, flood, drought, climate change, seasonal variations etc.); and
- duration of the potential for foreseeable adverse environmental effects. For those environmental effects related to elements that will remain in perpetuity, an appropriate temporal boundary will be defined and justified.

2.4 PROJECT ALTERNATIVES

2.4.1 Assessment of Alternatives and Selection of the Proposed Project

The EIS shall include an analysis of alternative means of carrying out the Project that are technically and economically feasible and the environmental effects of any alternative means. Furthermore, the EIS shall include a consideration of the alternatives to the Project. For further guidance, the Proponent is referred to the Agency guidance document *Addressing 'Need for', 'Purpose of', 'Alternatives to' and 'Alternative Means' under the Canadian Environmental Assessment Act* (CEAA 1998). When assessing project alternatives, the Proponent is encouraged to take into account the relationships and interactions among various components of the ecosystem, including effects on local communities. Further, the Proponent is encouraged to demonstrate how the preferred alternative contributes to sustainable development.

2.4.2 Alternatives to the Project

The EIS shall include an analysis of alternatives to the Project, including the “do nothing” alternative, describing functionally different ways to meet the Project’s need or rationale and achieve the Project’s purpose from the perspective of the Proponent. For each identified alternative to the Project, this section of the EIS shall explain how the Proponent developed the criteria to identify the major environmental, social and cultural, economic and technical costs and benefits of those alternatives, and the criteria and process associated with choosing the preferred alternative. This shall be done to a level of detail which is sufficient to allow government agencies, the public, Aboriginal groups and other stakeholders to compare the preferred project with the alternatives.

2.4.3 Alternative Means of Carrying out the Project

During the 2009/2010 review Taseko undertook an economic-based comparison of three alternative MDPs. Its preference for MDP option 3 was based on these economics, technical issues and associated impacts to the physical environment; the most important of which were the waste rock and tailings storage methods and locations. In addition, Taseko reported that dry-stacked and paste tailings of the other MDPs would be cost prohibitive. New Prosperity project as proposed, presents a variation of MDP option 2 as the preferred option. In its August 2011 Project Description, Taseko stated that proceeding with this MDP was no longer flawed as a result of excessive economic risk.

The EIS shall clearly state what factors have contributed to the Project being the preferred means (e.g. changes in the economic landscape, results of stakeholder consultations, etc.). In describing the preferred means, the EIS shall identify the relative consideration of environmental effects, and technical and economic feasibility. The EIS

shall also identify and describe alternative means to carry out the various components and activities of the Project that, from the perspective of the Proponent, are technically and economically feasible. In light of changes to on-site and off-site components and activities associated with the new MDP and reconfiguration of the mine site layout, if new alternative means above and beyond those which have been previously assessed are present, the Proponent shall consider these in its assessment of alternatives. If the alternatives to be assessed remain as identified from the previous project proposal, the Proponent shall reassess these alternatives given the economic justification presented for the preferred option.

If there is more than one alternative means that is technically and economically feasible, the EIS shall also describe the environmental effects of each alternative means. The alternative means that were considered but determined not to be technically and economically feasible shall be identified and the rationale as to why they were determined not to be feasible shall be documented. The criteria used to identify alternative means as unacceptable, and how these criteria were applied, shall be described, as shall the criteria used to examine the environmental effects of each remaining alternative means to identify the preferred alternative.

The EIS shall identify and describe the alternative means that have been considered to avoid or minimize adverse environmental effects. Reasonable alternatives shall reflect a broad spectrum of possibilities. Alternatives that were considered but were deemed not feasible due to social, economic, technical considerations shall also be identified.

2.4.3.1 Assessment of Alternatives for Mine Waste Disposal

As per Section 2.4.3, the EIS shall also include an assessment of the alternative means of carrying out the Project, which includes the disposal of mine waste. In conducting the alternatives assessment, the Proponent is encouraged to utilize the methodology provided by Environment Canada outlined below to conduct a robust and thorough assessment of alternatives means of mine waste disposal. The Proponent is encouraged to continue to meet with involved parties to ensure that their concerns and input are addressed in the alternatives analysis.

The Proponent has identified the need to use Little Fish Lake and Upper Fish Creek for the disposal of mine waste, including tailings and waste rock, as well as the management of process water. If the Project receives the required approvals through the EA process, the *Metal Mining Effluent Regulations* (MMER) would need to be amended to add these water bodies to Schedule 2 to designate them as TSFs in order to allow the use of water bodies for mine waste disposal. In addition, an exemption under Section 23 of the NWPA would be required to deposit tailings into Little Fish Lake. These regulatory processes would not be initiated until a detailed assessment of alternatives for mine waste disposal has been undertaken by the Proponent.

The assessment of alternatives for the mine waste disposal shall objectively consider all available options for mine waste disposal, including options that do not involve the use of natural water bodies frequented by fish as a TSF. This assessment shall qualitatively and quantitatively assess the effects of each alternative on the environment. Both the short

term impacts of each alternative and the long term risks through the closure and post-closure phases shall be assessed. The assessment of alternatives for mine waste disposal shall include all aspects of the Project that may contribute to the predicted impacts associated with the proposed TSF(s). The economic component of the assessment of mine waste alternatives shall consider the full costs of each alternative throughout the mine life cycle, from construction through post-closure, including long term maintenance and monitoring requirements, as well as costs associated with the legislated requirement for a compensation plan to offset fish habitat loss.

For further guidance, the Proponent shall to consult Environment Canada's *Guidelines for the Assessment of Alternatives for Mine Waste Disposal* (September 2011).

2.5 CONSULTATION

Meaningful involvement in the EA takes place when all parties involved have a clear understanding of the Project as early as possible in the review process. Therefore, the Proponent is required to continue to provide up-to-date information describing the Project, in particular those components and activities associated with the new MDP to the public and Aboriginal groups, and especially to the communities likely to be most affected by the Project. The Proponent is required to discuss how stakeholder considerations were incorporated into the Project design. The Proponent shall also involve Aboriginal groups in determining how best to deliver that information (e.g., the types of information required, translation needs, different formats and the possible need for community meetings).

2.5.1 Aboriginal Consultation

The EIS shall:

- document the Proponent's engagement with Aboriginal groups and methods for obtaining Aboriginal traditional knowledge;
- describe any changes that the Project may cause in the environment, which in turn may impact current use of lands and resources for traditional purposes by Aboriginal persons, physical and cultural heritage, and/or the capacity of renewable resources to meet the needs of the present and those of the future; and
- describe potential impacts of the Project on potential or established Aboriginal rights or title.

2.5.1.1 Engagement and Consultation

For the purpose of developing the EIS, the Proponent shall consult with Aboriginal groups that may be impacted by the Project with respect to potential or established Aboriginal rights or title.

The EIS shall:

- describe consultations undertaken prior to the submission of the EIS and the methods used;
- provide a summary of ongoing and future consultation activities with Aboriginal groups;

- describe the key issues or concerns raised from the review of the previous project proposal and from consultations undertaken with respect to the Project and how they will be addressed;
- document the potential impacts of the Project on potential or established Aboriginal rights or title, and the measures to prevent or mitigate those potential impacts; and
- where and how Aboriginal traditional knowledge is incorporated into the assessment, including in effects prediction and determining mitigation measures.

The Proponent is expected to use information, submissions, testimony, findings and conclusions generated as part of the 2009/2010 review when assessing and drawing conclusions about the environmental effects of the Project to the greatest extent possible. In describing key issues or concerns raised by Aboriginal groups and how the Project addresses the findings of the previous panel regarding significant adverse impacts to potential or established Aboriginal rights or title, the Proponent will provide the issues and responses in both narrative and tracking table format.

In preparing the EIS, the Proponent shall ensure that Aboriginal groups have access to the information that they require in respect of the Project and of how it may impact them, in particular those components and activities associated with the new MDP. The Proponent will provide hard copies of the EIS to Aboriginal groups for information and consultation purposes and during the EIS review stage in accordance with the consultation process outlined in the EIS.

2.5.2 Public Consultation

Public participation[6] is a central feature of the EA process. Meaningful public participation requires the Proponent to address concerns of all stakeholders regarding the potential environmental effects of the Project. In preparing the EIS on those aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to potential environmental effects, the Proponent is required to engage residents and organizations in all potentially affected communities, other interested organizations, and relevant government agencies. The Proponent must highlight the results of this engagement in the EIS, including the methods used, and the manner in which the Proponent intends to address the questions or concerns regarding potential environmental effects.

The EIS shall:

- document the public consultation opportunities that provided input for the development of the EIS. The location and timing of open houses and other consultation activities undertaken during the development of the EIS will be specified;

[6] As described in the Canadian Environmental Assessment Agency's Public Participation Guide (May 2008), terms such as "participation," "consultation," "involvement" and "engagement" are often used interchangeably, although they may mean different things to different people. These guidelines endeavor to use these terms in a manner that is consistent with the 'Public Participation Terminology' described in this guidance.

- describe the ongoing public consultation activities and any plans for further public consultation about the Project;
- summarize the comments made by the public to-date with respect to the Project;
- identify the key issues of concern raised by the public and how the Proponent has, or intends to, address them; and
- detail consultations undertaken with local governments, stakeholder organizations, and federal and provincial government organizations.

2.6 EXISTING ENVIRONMENT

The EIS shall provide a baseline description of the environment, including the components of the existing environment and environmental processes, their interrelations and interactions as well as the variability in these components, processes and interactions over time scales appropriate to this EIS. While relying on baseline data from the previous project proposal is essential, it may not be sufficient when assessing the potential adverse environmental effects that may be caused by new components and activities associated with the new MDP. Therefore updated baseline data shall be provided, where appropriate.

The Proponent's description of the existing environment shall be in sufficient detail to permit the identification, assessment and determination of the significance of potentially adverse environmental effects that may be caused by the Project, to adequately identify and characterize the beneficial effects of the Project, and provide the data necessary to enable effective testing of predictions during the follow-up program.

Where the existing environment has not changed from the previous project proposal, clear reference to existing information will be expected. The Proponent shall include any recent baseline studies and updated information and discuss changes to the environmental effects.

With a focus on those aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to potential environmental effects, the baseline description shall include results from studies done prior to any physical disruption of the environment due to initial site clearing activities planned as part of the site preparation phase. The baseline description shall include characterization of environmental conditions resulting from historical and current activities in the local and regional study area (see Cumulative Effects; Section 2.7.1.4). The EIS shall compare baseline data, in areas on which the assessment will focus, with applicable federal, provincial, municipal or other legislative requirements, standards, guidelines or objectives.

The baseline description shall include those VECs, processes and interactions that are likely to be affected by the Project. The Proponent shall also describe the nature and sensitivity of the area within and surrounding the Project. The Proponent shall also indicate the specific geographical areas or ecosystems that are of particular concern, and their relation to the broader regional environment and economy. Relevant information

about the VECs is to be presented graphically to document physical and biological (e.g., extent of home ranges) characteristics.

If the background data have been extrapolated or otherwise manipulated to depict environmental conditions in the study areas, modeling methods and equations shall be described and shall include calculations of margins of error and other relevant statistical information, such as confidence intervals and possible sources of error. Such information can be included in the main body of the EIS or in supporting documents that are referenced in the EIS.

2.6.1 Physical and Biological Environment

With a focus on those aspects of the project that have changed or are new from the previous Project proposal and on corresponding changes to potential environmental effects when describing the physical and biological environment, the Proponent shall take an ecosystem approach that considers both scientific and traditional knowledge and perspectives regarding ecosystem health and integrity. An ecosystem approach requires considering the effects of actions on a particular element of an ecosystem on other elements of that system, recognizing that all elements in an ecosystem are linked. Descriptions of the existing physical environment shall be based on existing scientific literature supported by any program reports and results from scientific studies. The Proponent shall consider the extent to which biological diversity (e.g. ecosystems and/or species diversity) is affected by the Project. The Proponent shall propose and present a rationale for the indicators and measures of ecosystem health, human health, and social health and integrity it uses. These shall be related to project monitoring and follow-up measures.

For the biological environment, baseline data in the form of inventories alone is not sufficient for the purposes of the EIS. The Proponent shall consider the species' populations, communities and their habitat. As appropriate, the Proponent shall summarize pertinent historical information on the size and geographic extent of populations as well as density for both terrestrial and aquatic ecosystems. Habitat at regional and local scales shall also be defined, as appropriate, in ecological mapping of aquatic and terrestrial vegetation types and species (e.g. ecological land classification mapping). Habitat use shall be characterized by type of use (e.g., spawning, breeding, migration corridors, feeding, nursery, rearing, wintering), as well as frequency and duration. Emphasis shall be on those species, communities and processes identified as VECs. The Proponent shall address issues such as habitat, nutrient and chemical cycles, food chains, productivity and climate information, to the extent that they are appropriate to understanding the effect of the Project on ecosystem health and integrity. Changes in range distribution and probability of natural variation of a given species over time shall also be considered.

The Proponent is required to confirm the applicability of the previous EIS on those aspects of the Project that have not changed. For aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to potential environmental effects, the Proponent must reassess the environmental components and associated VECs referenced in Section 2.3.5, as appropriate.

2.7 IMPACT ASSESSMENT

2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects

2.7.1.1 Effects Prediction

The EIS shall identify how the Project has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted. The Proponent shall include all information related to aspects of the Project that have changed or are new from the previous project proposal in the document, as relevant. Where components and activities have not changed, and the Proponent has determined that the environmental effects remain the same, the Proponent shall clearly direct the reviewers to where they may obtain the previous information. To facilitate the access of information on the Project as a whole, including components of the Project that have not changed, for reviewers, the information from the 2009/2010 Prosperity Gold-Copper Mine project is available on the Canadian Environmental Assessment Registry Information Site: http://www.ceaa-acee.gc.ca/050/Viewer_e.cfm?CEAR_ID=44811.

The EIS will describe the effects of the Project on the biophysical environment, as well as the corresponding effects on the social, economic, and cultural environments, on human health and on Aboriginal groups. Potential effects of the Project, and all project phases, shall be assessed with particular attention on those aspects of the Project that have changed or are new from the previous project proposal and on corresponding changes to potential environmental effects. In predicting and assessing the Project's effects, the Proponent shall clearly state the elements and functions of the environment that may be affected, specifying the location, extent, and duration of the effects and their overall significance. In making its conclusions, the Proponent shall verify if previous determinations of the environmental effects of the Project, including the determinations of the 2009/2010 review, are still valid and how the Project addresses environmental effects of the previous project proposal.

The assessment of the effects of the works and activities associated with all phases of the Project shall be based on a comparison between the predicted future conditions with the Project and the predicted future conditions without the Project. The assessment shall describe the environmental effects of the Project, the proposed mitigation measures and an assessment of the effectiveness and any areas of uncertainty associated with the measures. Aspects to reduce risk of failure and ensure best possible performance of mitigation measures shall also be described. In making its conclusions the Proponent shall verify if previous determinations on the environmental effects of the Project are still valid and how the new MDP changes the environmental effects determination of the Project. Where mitigation measures are proposed and there is little experience or uncertainty as to their effectiveness, the potential risks to the environment and the means to address them (e.g. risk assessment, monitoring plan, contingency plan, etc.) shall be clearly described.

The EIS will consider the broad range of potential environmental effects but will focus on interactions between the Project and the identified VECs. The Proponent shall also include a discussion of changes to the Project caused by the environment. Each environmental change shall be described in terms of whether it is direct or indirect and positive or adverse.

For the areas on which the assessment is focused, the EIS shall include comprehensive analyses of both the short- and long-term effects of the Project on the environment. The Proponent shall comment on the quality of the data which are used to draw conclusions on the environmental effects and how representative the data, clearly separate factual lines of evidence from inference, and state any limitations on the inferences or conclusions that can be drawn from them.

Where appropriate, the Proponent is expected to employ standard ecological risk assessment frameworks that categorize the levels of detail and quality of the data required for the assessment. These categories are as follows:

- Tier 1: Qualitative (Expert opinion, literature review, and existing site information);
- Tier 2: Semi-quantitative (Measured site-specific data and existing site information); and
- Tier 3: Quantitative (Recent field surveys and detailed quantitative methods).

Thus, if the Tier 2 assessment still indicates a potential for significant negative effects, then a Tier 3 assessment would need to be conducted to reduce the level of uncertainty. If the risk characterization component is uncertain this may necessitate probabilistic modeling about the effect. The Proponent is encouraged to use an impact matrix methodology to evaluate the potential effects of the Project. Where appropriate, the Proponent will present the results of risk assessment as a range of values rather than a single value.

The consideration of views from Aboriginal groups and the public, including any perceived changes attributed to the Project, shall be recognized and addressed in the assessment method.

2.7.1.2 Mitigation Measures

Mitigation is 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 effects through replacement, restoration, compensation or any other means. An explanation of how the mitigation hierarchy has been considered shall be provided. The discussion shall include how consideration was given including documenting all efforts to avoid adverse environmental effects. 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. Where avoidance is not possible, steps to minimize effects and compensate, if appropriate, should be taken. The discussion shall include how consideration was given to the best means of avoiding, mitigating or compensating

environmental effects.

The Proponent shall describe the standard mitigation practices, policies and commitments that constitute mitigation measures to be applied as part of best practices. The Proponent shall indicate if these mitigation measures were identified for the previous project proposal and included as conditions in the provincial environmental assessment certificate and if they still apply or if these measures are designed to address the components and activities associated with the new MDP.

The Proponent shall then describe its conceptual environmental protection plan and the environmental management system through which it will deliver the plan. The plan shall provide an overall perspective on how potentially adverse effects will be avoided or minimized and managed over time. As well, the Proponent shall describe its commitments, policies, and arrangements directed at promoting beneficial or mitigating adverse social, economic and cultural effects. The Proponent must identify who is responsible for the implementation of these measures and the system of accountability. The Proponent shall indicate which measures respond directly to statutory or regulatory requirements including any federal and provincial regulations, policies and standards.

In addition to mitigation proposed by the Proponent, the EIS shall discuss the implementation of the recommendations and commitments to be applied to the Project from the previous project proposal. Particular attention shall be paid to recommendations which alter the new MDP and how that may in turn change the predicted environmental effects of the Project.

For all of the adverse biophysical effects and any consequential social, economic and cultural effects, both new and identified in the 2009/2010 review, the Proponent shall present the mitigation measures that it intends to implement. Wherever possible, it shall provide detailed information on the nature of these measures, their implementation, their management and the post-installation follow-up.

All proposed mitigation shall be described by project phase, timing and duration. Sufficient detail shall be provided on methods, equipment, procedures and policies associated with the proposed mitigation that allows for the identification and analysis of the significance of the environmental effect of the Project. The Proponent shall discuss and evaluate the effectiveness of the proposed measures and assess the risk of mitigation failure and the potential severity of the consequences of such failures. For measures in which there is uncertainty related to effectiveness or is not as effective as predicted the Proponent shall identify contingency plans.

The EIS shall 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 shall also present an assessment of the effectiveness of the proposed mitigation measures, as well as any supporting preconditions or resources required to properly implement the

measures. The rationale for assessing if a particular mitigation measure reduces the significance of an adverse effect shall be made explicit.

The Proponent shall indicate what other mitigation measures were considered and, in the event of rejection, explain why they were rejected. Trade-offs between cost savings and effectiveness of the various forms of mitigation shall be justified. For each environmental component potentially affected by the Project, the EIS shall describe any proposed monitoring programs that will be designed, as outlined in Section 2.8.

2.7.1.3 Compensation

For certain VECs, where adverse residual effects are anticipated and are unavoidable, the Proponent shall propose compensation measures. These measures shall apply both to the biophysical environment and the human environment. The Proponent must indicate how and to what extent the choice of measures was determined in cooperation with Aboriginal groups, other interested parties and relevant authorities. Any compensation measures put in place for the Project, including those provided under agreement and any areas of uncertainty associated with the measures shall be clearly described. Aspects to reduce risk of failure and ensure best possible performance of compensation measures shall also be described.

For effects on fish and fish habitat, the EIS shall identify and characterize the extent to which fish population and fish habitat, the productive capacity of water bodies, recreation values, wildlife, wildlife habitat and the habitat of species at risk values may be effected and discuss how these effects can be avoided, reduced or mitigated. To compensate for any loss or altered fish habitat, the Proponent shall present a compensation program that complies with DFO's policies and any other Government of Canada policies and based on technical, economic and biological feasibility. It will be developed in consultation with DFO and will be expected to undergo Aboriginal, public and regulatory agency scrutiny and reviewed before being finalized and implemented.

For effects on wetland habitat and on wetlands associated with migratory birds and species at risk, the EIS shall include a draft habitat compensation plan which will serve to ensure long-term protection of wildlife habitats, functions, and populations. The Proponent is encouraged to consult with Environment Canada during the preparation of the habitat compensation plan. .

2.7.1.4 Cumulative Effects Assessment

The Proponent shall identify and assess likely cumulative environmental effects of the Project, including on-site and off-site components, in combination with other past, present or reasonably foreseeable projects or activities within the study areas.[7]

Cumulative effects may result if:

[7] The Canadian Environmental Assessment Agency's Operational Policy Statement OPS-EPO/2- 2007, *Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*, and the *Cumulative Effects Assessment Practitioner's Guide* (CEAA 1999) provide further guidance for conducting cumulative effects assessment.

- implementation of the Project would cause residual adverse effects on the environment, taking into account the application of technically and economically feasible mitigation measures; and
- the same environmental components are affected by other past, present or reasonably foreseeable future projects or activities.

Accordingly, the Proponent shall:

- identify and justify the components of the environment that will constitute the focus of the cumulative effects assessment. The Proponent's assessment shall emphasize the cumulative effects on the main VECs that could potentially be most affected by changes to components of the Project, including but not limited to each of the VECs referenced in Section 2.3.5 and those VECs where significant cumulative effects were determined in the previous assessment.
- present spatial and temporal boundaries for the cumulative effect assessment for each VEC selected. The boundaries for the cumulative effects assessments will again depend on the effects being considered (i.e., will generally be different for different effects). These cumulative effects boundaries will be larger than the boundaries for the corresponding Project effects;
- identify the sources of potential cumulative effects. Specify other projects or activities that have been, will be or reasonably foreseeable carried out that could produce effects on each selected VEC within the boundaries defined, and whose effects would act in combination with the residual effects of the Project;
- describe the mitigation measures that are technically and economically feasible;
- determine the significance of the cumulative effects. 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 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; and
- develop a conceptual follow-up program to verify the accuracy of the assessment or to evaluate the effectiveness of mitigation measures for certain cumulative effects.

If the Project is likely to result in improved infrastructure in the area or may facilitate access into the area, the Proponent shall evaluate the likelihood of further development in the area that could result in increased cumulative effects on the same VECs.

2.7.1.5 Determination of the Significance of Residual Effects

The EIS shall present any residual effects of the aspects of the Project that have changed or are new from the previous project proposal on the components of the biophysical and human environments persisting despite the proposed mitigative activities. The EIS shall include a summary table that presents the environmental effects, the mitigation measures and the residual effects.

The EIS shall identify the criteria used to assign significance ratings to any predicted adverse effects. The EIS shall contain a detailed analysis of the significance of the potential residual adverse environmental effects it predicts. It shall contain clear and sufficient information to enable the Panel, Aboriginal groups and the public to understand and review the Proponent's judgment of the significance of effects. The Proponent shall define the terms used to describe the level of significance.

The Proponent shall assess the significance of predicted adverse effects according to the following categories, as applicable:

- Magnitude of the effect;
- Geographic extent of the effect;
- Timing, duration and frequency of the effect;
- Degree to which effects are reversible or mitigable;
- Ecological and social context; and
- Existence of environmental standards, guidelines or objectives for assessing the effect.

In assessing wildlife populations, population size, trend, productivity and generation time are key considerations.

The EIS shall clearly explain the method and definitions used to describe the level of the adverse effect (e.g., negligible, low, moderate, high) for each of the above categories and how these levels were used to produce an overall conclusion on the significance of adverse effects for each VEC. This method shall be transparent and reproducible.

In assessing significance against the above criteria, the EIS shall, where possible, employ relevant existing regulatory documents, environmental standards, guidelines, or objectives such as prescribed maximum acceptable levels of emissions or discharges of specific hazardous agents into the environment.

If significant adverse residual effects are identified, the Proponent shall determine the probability that they will occur. The Proponent shall also address the degree of scientific uncertainty related to the data and methods used within the framework of its environmental analysis, and how the precautionary principle has been applied to that analysis and related mitigation measures.

2.7.1.6 Summary of Effects Assessment

The EIS shall identify how the Project as proposed is different from the previous project proposal and whether any changes to the Project will result in environmental effects that are different than those predicted in the previous review. Where components and activities have not changed, and the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and provide relevant information from the previous EA, as appropriate or as applicable. The effects assessment for the Project will

focus on key environmental components and their associated VECs that were assessed based on changes to the Project components and activities.

The Proponent will provide in a table format, a summary of the following key information:

- a concise summary of the Project's beneficial and adverse effects;
- a summary of mitigation and compensation measures;
- a brief description of any potential residual effects;
- a brief description of cumulative effects;
- a determination of the significance of residual effects; and
- for those adverse effects found to be significant, a determination of whether the effect is likely to occur.

2.7.2 Physical and Biological Environment

In conducting the effects assessment on the physical and biological environment, the Proponent shall give consideration to the guidance provided in the following sections.

2.7.2.1 Geology and Geochemistry

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in environmental effects on geology and geochemistry. Where components and activities related to geology and geochemistry have not changed, and the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and provide relevant information from the previous EA, as appropriate or as applicable.

The EIS will include the most up to date ARD/ML geochemical information for the Project. A summary of all geochemical source terms used to predict water quality must be provided. Where geochemical source terms have changed, all data and rationale must be included. The ARD/ML prediction information will be used to predict water quality for effects assessment and to determine mitigation requirements for the Project. The focus of this consideration shall be on those aspects of the Project that have changed or are new from the previous Project proposal and on corresponding changes to potential environmental effects. As appropriate, additional information will be provided on the following[8]:

- overburden, waste rock, tailings and ore/low grade ore characterization, volumes, segregation/disposal methods, mitigation/management plans, contingency plans, operational and post-closure monitoring and maintenance plans;
- estimate of the volumes of potentially acid-generating (PAG) and non-PAG ore/low grade ore and waste and their geochemical classifications;
- assessment of the feasibility to successfully segregate PAG and non-PAG waste materials during operations, proposed geochemical segregation criteria and

[8] MEND Acid Rock Drainage Guidance Manual, Guidelines for metal leaching and acid rock drainage at mine sites in British Columbia, and Environment Canada's Environmental Code of Practice for metal mines provide further guidance for conducting an assessment on ARD/ML.

identification of operational methods that will be required to achieve geochemical characterization during operations (i.e. geochemical surrogates, on site lab, procedures needed, etc);

- sensitivity analysis to assess the effects of imperfect segregation of PAG and non-PAG waste rock materials;
- estimates of potential lag time to ARD/ML onset for PAG materials (including various waste rock, tailings, low grade ore) and ability to fully saturate PAG materials during operation and post-closure; and
- surface and seepage water quality from all components mine including waste rock dumps, tailings/waste rock impoundment facility, stockpiles and other infrastructure during operation and post-closure.

2.7.2.2 Atmospheric Environment

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on the atmospheric environment. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous EA, as appropriate or applicable.

The baseline climate data collected as per Section 2.6.1 will be used to assist in the air quality dispersion assessment and to assist in the hydrology and water management work.

The following documents shall be used for guidance in establishing and operating any meteorological stations that may be established:

- Environment Canada AES, 2004. MSC Guidelines for Co-operative Climatological Autostations, Version 3.0 Meteorological Service of Canada, September 2004; and
- World Meteorological Organization, 2006. Guide to Meteorological Instruments and Methods of Observation. Preliminary seventh edition. WMO-No.8. Secretariat of the World Meteorological Organization, Geneva Switzerland.

Criteria Air Contaminants

The EIS shall identify potential effects on air quality associated with all project phases related to aspects of the Project that have changed or are new from the previous project proposal, including point and mobile sources. Examples include heavy and light-duty vehicle exhaust, fugitive particulate matter, emissions from the diesel fuel generator and particulates from blasting and ore concentrate transportation.

The analysis shall include the following:

- an assessment of emissions and short-term air quality effects from site preparation and construction-related activities, including open burning;

- a source emissions inventory table for the mine site describing the source (i.e. mine rock), operating period, pollution control equipment if any, contaminants (i.e. fugitive dust, PM_{10},VOCs, etc) and predicted concentrations;
- a discussion of:
    - measures considered to minimize the release of greenhouse gases and air contaminants (dust - both emissions and fugitive, particulate exhaust fumes and other air contaminants),
    - atmospheric dispersion of emissions with emphasis on $PM_{2.5}$ and PM_{10} on a local and regional scale,
    - wet and dry acidic deposition resulting from release of gases such as NO_X and SO_X,
    - the worst-case dispersion modeling results (including mapping) and noting the location of key and sensitive receptors,
    - combined predicted cumulative air quality concentrations during the various Project phases with suitably conservative estimates of background concentrations to arrive at the worst-case cumulative air quality concentrations,
    - predicted cumulative air quality concentrations compared with the national ambient air quality objectives and Canada wide standards for air quality and any applicable provincial ambient air quality criteria,
    - impact on biological receptors such as vegetation, fish, wildlife and human health, and
    - demonstration of compliance with applicable federal and provincial air quality standards and guidelines; and
- use of an appropriate Air Quality Dispersion Model(s) to:
    - predict ground level concentrations for criteria and other air contaminants in accordance with existing dispersion model guidelines, and
    - assess the potential for effects on human health at sensitive and other receptors, including camps where workers temporarily reside.

Dustfall

The EIS documentation relating to dustfall shall consider:

- predicted data for mass of dustfall per area per unit time and predicted metals concentration in the dustfall incorporating any new data for dust fall and meteorology to update and or confirm assumptions used in air quality modeling; and
- measures to mitigate dustfall by exposed tailings beaches, and other sources, during closure and post-closure phases, including the likelihood of establishing and maintaining native plant cover on tailings and other surfaces.

Greenhouse Gases

With respect to Greenhouse Gases (GHGs), the EIS shall:

- discuss the analytical techniques and relevant policies considered in the EIS;

- list and estimate the emissions of GHGs predicted for all relevant project sources and relate to overall Provincial and National totals;
- discuss possible changes in the climate;
- estimate the impact of flooding the forest floor in the area of the TSF and resulting methane production and loss of forest and carbon sequestering;
- identify mitigation measures considered to control GHG emissions related to the Project; and
- 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, lake levels and stream flow.

Additional guidance can be obtained from the Agency's guidance document *Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners* (2003).

Light Pollution
The EIS shall identify potential effects on the environment resulting from artificial light pollution at the mine site, and will provide a description of management measures to mitigate any such effects.

2.7.2.3 Acoustic Environment
The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on the acoustic environment. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous EA, as appropriate or as applicable.

The EIS shall assess the potential for noise effects resulting from the Project. The EIS shall:

- identify and quantify potential noise sources including reference to construction and operational phases as well as to noise associated with loading concentrate into rail cars and increased road traffic;
- identify and evaluate impacts from noise on potential wildlife receptors;
- identify and evaluate impacts from noise on potential human receptors, such as lots zoned for use by traditionally sensitive receptors (e.g. provide residences, cottages, trapper cabins) at property lot lines and/or at land use permit boundaries
- describe the proximity of identified receptors to Project components; and
- describe mitigation and noise management measures to be incorporated into a conceptual Noise Management Plan, including the conditions for mitigation and evaluate compliance with appropriate noise guidelines.

2.7.2.4 Water Quality and Quantity

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on water quality and quantity. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous EA, as appropriate or as applicable.

2.7.2.4.1 Hydrology and Hydrogeology

Surface Water

Baseline data collected for the previous version of the Project shall be augmented with more recent hydrologic and climatic data collected as part of the on-going local monitoring program and the Water Survey of Canada program. The updated hydrological baseline data will assist the EIS in:

- documenting the development of the site water balance model and the determination of water supply requirements;
- documenting run-off, seepage and sediment control works;
- assessing impacts on fish and fish habitat due to modification of stream flows and lake levels; and
- developing water quality predictions and mitigation requirements.

For the components of the Project that have changed or are new from the previous project proposal, the EIS shall:

- provide an assessment of changes to the hydrologic regime resulting from site construction (deforestation, removal of overburden, dewatering, increased man-made drainage, etc.), operation, closure and post-closure, with a focus on lakes and streams that relate to existing fish, fish habitat and proposed fish compensation plans including details about changes in lake levels and the magnitude of stream flow, timing and duration for average, dry and wet hydrologic conditions. The assessment shall discuss how fish and fish habitat of Fish Lake is affected as a result of changes in hydrological conditions and in turn how this will affect spawning and population estimates;
- assess uncertainty from projected changes to the hydrologic regime; and
- include consideration of the effects of climate change and climate variability on the overall hydrology (e.g. peak and average annual flow rates, ice jams), and water balance that could affect the environment or project infrastructure.

To support the development of suitable water management plans, the Proponent shall develop a site water balance model that will simulate the movement of water within the components of water management infrastructure and project operating areas (e.g. mill, open pit, TSF) and will cover the whole mine life cycle (construction, operation closure and post-closure phases). The water balance model will use as a minimum a monthly time series and shall include the following:

- a clear description of model inputs including:

  - physical inputs (e.g. drainage basins, topography, and land uses),
  - climate inputs (e.g. precipitation, snow, and evaporation). Each input shall be presented as a monthly distribution. The inter-annual variability shall be quantified and estimate of extreme conditions provided for each, and
  - hydrologic inputs (e.g. runoff coefficients for different land uses);
- an evaluation of the average precipitation scenario as well as a full range of possible wet and dry scenarios. Appropriate return periods shall be defined and methodologies for the impacts evaluation of possible climate change (wet, dry and average) scenarios shall be discussed;
- an accounting of variations in Fish Lake water level and flushing rates based on physical lake data and the measurement of flow from inlets and outlets as part of the water balance assessment for all scenarios considered;
- an accounting of water accumulation in the headwater area located south of the tailings storage area for all scenarios considered;
- an assessment of how a positive water balance will be maintained at all times over PAG waste rock and tailings impounded in the TSF. The water balance required to successfully operate the TSF under ideal conditions and in dry years shall be completed;
- the predicted water balance for each year, or stage, of the mine life and all inflows and outflows in tabular format; and
- a sensitivity and uncertainty analysis to determine potential variability in water quantity results from corresponding changes in the values of model inputs.

With respect to water management, the EIS shall:

- include maps that show future flow patterns, delineation of catchment areas, future land use including location of open pit, buildings, ore/low grade ore storage areas, mine rock stockpiles, tailings storage facility, water storage or treatment areas, proposed diversions channels and runoff management features;
- include a conceptual Water Management Plan for all dams, including flows and levels during construction, operation, closure and post-closure. The assessment shall include diversions and impacts to aquatic systems from increased and decreased surface flows;
- predict the surface run-off coefficient and rate of run-off for the different areas of the mine site, and describe contingency plans for extreme run-off events and drought conditions;
- recommend measures for dealing with water inflows to the open pit during operation;
- profile the open pit and show levels to which flooding can be achieved after closure based on hydrology and the pit design and contours and provide predictions with respect to flooding rates and ultimate water levels for the open pit after closure;

- provide the conceptual design features of all collector and diversion ditches, culverts, bridges, spillways and water storage facilities (including sediment ponds and seepage collection ponds);
- provide an assessment and prediction for all site water diversions including volumes, discharge structures and locations, and potential effects on the receiving environment hydrology; and
- identify, map and characterize any faults located in the open pits and the extent of the faults beyond the confines of the open pit. Include an assessment of the hydraulic connection between the open pits and the adjacent water courses.

Groundwater

For the components of the Project that have changed or are new from the previous project proposal, the EIS shall:

- provide a groundwater assessment to determine how the Project and related components and activities will impact:
    - the local hydrogeological and groundwater units,
    - groundwater flows, quality and quantity, and
    - fish and fish habitat;
- assess the need for mitigation or monitoring measures;
- provide results of the hydrogeological assessment that determines groundwater seepage location, rates, seepage quality, and direction into or from applicable project features and from the open pit during future overflow. Potential seepage to other water bodies will be emphasized and assessed for potential impacts to fish and fish habitat;
- assess the hydrogeologic conditions between Fish Lake and the open pit and evaluate the potential for environmental effects to Fish Lake during operations and closure. Also evaluate the implications for pit water management and pit wall stability during operations;
- provide drawings and/or figures showing equipotential contours to determine/illustrate projected seepage conditions for applicable Project components;
- provide drawings and/or figures showing groundwater contours (piezometric surfaces) to illustrate projected seepage conditions for the applicable Project components;
- provide a discussion of the potential for off-site migration of impacted groundwater, and an analysis of contaminant attenuation capacities within the hydrogeological units within the project area;
- provide a description of any proposed mitigation strategies for groundwater seepage, including seepage within the operations area as defined in the MMER and for any migration of impacted groundwater outside of the operations area;
- provide the results of a groundwater flow model of the local catchment for operation and post-closure period incorporating all major permanent mine

components, including the open pit, TSF, and mine rock stockpiles. Determination of equilibrium water levels of the pit lake and Fish Lake will be emphasized;

- include an analysis of the potential for sulphide oxidation within surficial and bedrock units as a result of groundwater drawdown within the project area;
- demonstrate how and if the withdrawal of groundwater, or the creation of physical changes to the aquifers within the project area, will affect the availability of groundwater for applicable users (e.g. mine site facility operations, on-site drinking water systems) or base flows in surface water (surface watercourses), thereby causing surface water impacts;
- consider possible groundwater seepage from all water bodies that could be impacted to the open pit during the operational and post-closure phases that could contribute to water deficit problems in Fish Lake; and
- include effects of surface infiltration on groundwater flows that may affect discharges into streams and lakes.

With respect to seepage from tailings porewater, the EIS shall:

- predict seepage rates and concentration of contaminants from the TSF toward Big Onion Lake;
- predict how the long-term discharge of tailings porewater to Fish Lake, Big Onion Lake or Wasp Lake would impact water quality in the lakes and to upper Fish Creek;
- consider, describe and assess possible groundwater seepage from all water bodies that would be affected by the open pit during the operational and post-closure phases and any possible relation to water balance in Fish Lake; and
- describe seepage control measures from the TSF during operation and long-term post-closure that would eliminate or minimize water quality degradation to receiving lakes and creeks.

With respect to seepage from waste rock and ore/low grade ore stockpiles, the EIS will:

- predict seepage rates and concentration of contaminants; and
- predict the effects to water quality in Fish Lake and its tributaries.

Modelling in support of the above matters will be based on recent site-specific data. When relying on previously referenced information to meet these requirements, the Proponent shall explain how representative and why that information can be used to assess the effects of the components of the Project that have changed or are new and the corresponding changes to the environmental effects previously predicted.

2.7.2.4.2 Water Quality and Aquatic Ecology

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on water quality and aquatic ecology. Where the Proponent has determined that environmental effects remain as identified in the previous project

proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous EA, as appropriate or as applicable.

In conducting the effects assessment for water quality and aquatic ecology, the EIS shall include the following:

- graphical presentation of key variables and stream flows over time for key sites to illustrate patterns and variability;
- prediction of the quality, over time, of water in all water bodies that could be impacted;
- an evaluation of pit-lake water quality in Pit Lake including consideration of the effects of pit depth in relation to mixing and anoxic conditions, release of metals from pit walls, and acid production. Include an assessment of the degree of uncertainty associated with these predictions;
- power and confidence calculations for key variables at key sites once the effects have been predicted to guide future monitoring. Key variables are those that the impact assessment indicate may contribute to degraded water quality, and key sites are those sites where the discharge of key variables might take place;
- the entire range of the water quality and quantity data in addition to mean values, because identification of extreme events that have serious environmental consequences may not be captured from the data set when using only mean values; and
- tabulate all of the water quality and quantity data in an appendix, including summaries of the maximum, minimum, mean or median, standard deviation and coefficient of variation for each site.

The EIS shall integrate results of the ARD/ML predictive modeling in addition to surface hydrology, water balance and hydrological information to develop water quality predictions for inclusion into the impact assessment. The EIS will include the following:

- information describing how current baseline and ongoing surface and groundwater quality and flow rates are anticipated to be altered by individual mine components. Information will focus particularly on the ore/low-grade ore stock piles, waste rock piles, and the TSF;
- an assessment and prediction of water quality for major mine components (waste rock stockpiles, TSF, ore/low grade ore stockpiles, etc.) and all site water discharges, including groundwater discharge points in lakes and streams, for the different phases of the Project (i.e. construction, operation, closure, post-closure). This assessment shall include volumes, water quality, discharge structures and location, potential effects on the receiving environment and the description of any mitigation strategies and/or treatment processes;
- an evaluation of water quality from Pit Lake to Fish Creek based on expected ARD/ML and watershed runoff including an assessment of the degree of uncertainty associated with these predictions;
- mitigation strategies for closure including temporary and/or early permanent closure;

- a description of contingency plans to address uncertainties or risks associated with water quality predictions, and for dealing with potential excessive run-off events and drought conditions if required;
- strategies for management of surface run-off from the various mine components, including mitigation strategies to separate contact water from non-contact water and how to prevent erosion and sediment discharge during the construction, operational, closure and post-closure phases; and
- details on additional water requirements (if applicable) necessary to maintain full saturation of the PAG material. If exposure is expected, the results of kinetic test work will be provided to assist in the evaluation of potential effects from exposure.

In conducting the effects assessment on surface water quality, the Proponent shall consider the following:

- effluent characterization and quality predictions. Predicted effluent quality shall be directly compared to existing standards/guidelines/objectives (e.g. Canadian Council of Ministers of the Environment, BC Ministry of Environment, MMER), where available;
- waste discharge and seepage flows, concentrations, and loadings shall be predicted using data from various sources, which include:
    - quantity and quality of groundwater and surface drainage from the area to be mined,
    - if any lakes are to be drained, quantity and quality of water to be released from those lakes into the receiving water,
    - quantity and quality of tailings pore water from milling process tests,
    - quantity and quality of leachate from samples of tailings, waste rock, and ore/low grade ore,
    - mine effluent management (effluent, run-off, seepage) including where mine effluent would be discharged to the environment,
    - quantity and quality of effluent to be released from the site into the receiving waters, and
    - quantity and quality of humidity cell or column test leachate from acid rock testing;
- use of the predicted waste loads in a mass balance model of the mine area to predict the resulting receiving water quality for all Project phases under normal and worst case conditions (e.g., 1-in-10 year flood and low flows) including:
    - predictions of waste loads and water quality on a month by month basis for the critical years of mine site development (critical years are those years when worst-case contaminant loads are expected such as during construction, years when significant construction events or water use change occur, milestone years of operation, and at closure);
- assessment of the spatial extent of effects downstream of the Project (e.g., effluent dilution modeling) down to a magnitude that is indistinguishable from natural

variability (e.g. baseline plus or minus 2 standard deviations if outside 95% of measured results or some other, well-rationalized criterion); and

- assessment of the environmental effect of the predicted waste loads and receiving water quality under worst case conditions, and assess the environmental effect of the resulting water quality on aquatic organizations using federal and/or provincial water quality objectives.

Modelling shall be used to determine concentration-based effluent limits.

If applicable, the EIS will include recommendations for developing watershed-specific water quality objectives for key variables on all watercourses with the potential to be impacted by effluent discharge or seepage and taking into consideration provincial water quality objectives and the Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines for water, sediment and biota, existing baseline conditions for water, sediment and biota quality, and the existing and potential water uses that shall be designated for protection, including, if applicable, drinking water and recreational use.

The EIS will provide details of a surface water quality monitoring program for the mine site. The surface water quality monitoring program shall provide a basis for the formulation of site-specific water quality objectives for the aquatic environment (if applicable), provide the basis for the determination of allowable maximum waste water discharge and seepage rates, options if seepage water quality is not sufficient to allow for a discharge receiving waters, and based on specific water quality objectives in support of biological monitoring programs.

The surface water quality monitoring program will include the characterization of the range and measure of water and sediment quality and aquatic ecology characteristics.

2.7.2.4.3 Sediment Quality and Benthos

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on sediment quality and benthos. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous EA, as appropriate or as applicable.

The EIS shall describe the effects of the Project on sediment quality and on biota as follows:

- discuss how potential changes related to construction, operation, closure and post-closure may affect toxicity and physical habitat requirements (e.g., particle size) for benthos and fish eggs, utilizing sediment quality baseline data with emphasis on but not restricted to locations in Fish Lake likely to result in deposition (such as littoral areas) if the TSF discharges;

- identify sediment parameters that may be present at elevated levels, in comparison to applicable federal and provincial sediment quality guidelines, and, if necessary, use this information to propose site-specific sediment quality objectives; and
- characterize potential changes to the benthic invertebrate community from Project effects.

2.7.2.5 Fish and Fish Habitat

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on fish and fish habitat. The EIS shall identify how the Project as proposed addresses significant adverse effects determined in the previous EA. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS will identify potential effects on fish and fish habitat during all phases of the Project. The EIS will outline separate fish and fish habitat mitigation and compensation plans for sub-section 35(2) authorization(s) under the *Fisheries Act* for the Harmful Alteration, Disruption or Destruction (HADD) of fish habitat, and under the MMER Schedule 2 requirements for the deposit of deleterious mine waste in natural water bodies frequented by fish. Sufficient detail will be provided in each compensation plan to allow the Panel to determine whether proposed measures to compensate for those effects are technically and economically feasible and whether these measures effectively mitigate significant adverse environmental effects with regard to DFO's 'Policy for the Management of Fish Habitat' (1986). These plans may include information from the previous project which had been prepared to meet the requirements of the 35(2) authorization and MMER Schedule 2 approval application process.

It is anticipated that final details for all compensation plan elements will be provided as appropriate once there are agreed upon plans and sub-section 35(2) authorization(s) under the *Fisheries Act* is/are requested, and when MMER approval is sought.

The analysis of potential effects will consider:

- productive capacity of aquatic systems. This will include comparison with other similar habitat or ecosystems in the region and the province and a variety of other parameters such as fish density, biomass or productivity, biomass and diversity and water quality parameters such as nutrients, pH, dissolved oxygen, or temperature;
- immediate fish habitat of the Fish Creek watershed and the downstream salmon populations in the Taseko and Chilcotin Rivers;
- all water bodies that may experience changes to Aboriginal, commercial and/or recreational fisheries resources;

- habitat loss or alteration, including aquatic vegetation and sensitive areas such as spawning grounds, nursery/rearing areas, feeding areas, summer/winter refuges and migration corridors;
- species of cultural, spiritual or traditional use of importance to Aboriginal groups;
- how blasting activities may affect fish health, behaviour and physiology and will identify the expected sonic impacts within Fish Lake and other water bodies;
- potential for changes in migratory fish behaviour as a result of changes in water quality and quantity;
- fish health particularly regarding metal levels in fish using baseline data on metal levels in fish muscle and liver in areas that may be impacted by effluent or seepage from the mine; and
- species at risk considerations. For those with higher status designation and protection under provincial legislation the Proponent shall provide an overall benefit plan.

The potential effects and planned mitigative strategies for avoiding a HADD will be identified for the following:

- footprint of development;
- infrastructure development;
- dewatering activities;
- flow changes from water management and diversions; and
- compensation activities.

In developing compensation plans consideration will be given to the following:

- the extent to which mitigation measures considered for routine Project construction, operation and closure related activities developed and guided by best management practices, operational policy guidance and Project specific Environmental Management Plans will reduce or eliminate potential adverse effects of the Project on fish and fish habitat during all phases of the Project;
- appropriate compensation measures to offset unavoidable losses where it is anticipated that mitigation measures will likely not meet the goal of maintaining or enhancing the productive capacity of fish and fish habitat. These measures shall be developed with regard to DFO's Policy for the Management of Fish Habitat (1986), Practitioners Guide to Habitat Compensation, and provincial policies, guidelines;
- actual or potential direct and indirect contribution to sustaining cultural, recreational and/or commercial fisheries resources consistent with local fisheries management objectives;
- time delays between loss of habitat productive capacity and when replacement habitat is created and becomes functional as well as uncertainty in whether the replacement habitat is likely to function as intended; and

- extent to which compensation measures are demonstrated to be biologically sound, reasonable, and based upon practical and proven techniques.

2.7.2.6 Terrain and Soil

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on terrain and soil. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS will identify potential effects on terrain and soil during all phases of the Project. The EIS will provide a terrain and soils survey that will:

- outline a conceptual baseline and monitoring program to assess trace element uptake in soils at mine closure, and where possible, during the mine life;
- outline a conceptual soil erosion and sedimentation plan for the mine; and
- include details of soil sample analysis completed and the QA/QC program followed.

Based on the results of the terrain and soils survey, the EIS will include an assessment of terrain stability. The information collected from the terrain and soil survey and mapping will be used in the soil salvage and soil erosion control assessments and preparation of the conceptual closure plan. The EIS shall include information on pit wall, tailings pond embankments and waste rock stability analyses completed to date.

In order to facilitate determination of soil salvage requirements, the rooting depth, soil horizon and depth to growth impediments will be compiled in a tabular form for each profile in each soil management unit. Typical or representative soil profile descriptions shall be appended to the soil survey report.

The terrain and soil survey will be carried out following standard provincial and federal systems. In describing the survey the EIS will reference *The Canadian System of Soil Classification* (Agriculture and Agri-food Canada (1998)).

2.7.2.7 Vegetation

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on vegetation. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS will identify potential effects on vegetation during all phases of the Project. The Proponent shall develop appropriate mapping products to assist in assessing the effects of the Project on key vegetative communities, and identifying rare ecosystems and

species at risk. Data shall reflect all vegetation communities present and be presented in Terrestrial Ecosystem Mapping/Sensitive Ecosystem Inventory format.

The EIS will include a detailed assessment of baseline vegetative communities, species groups or ecosystems that have intrinsic ecological or social value, are representative of overall ecosystem condition and are sensitive to project activities. These should include:

- old forests;
- wetland ecosystems;
- riparian ecosystems
- grassland ecosystems;
- rare plants;
- ecological communities of conservation concern (e.g. red- and blue-listed ecological communities tracked by the BC Conservation Data Centre); and
- specific country foods identified by local and Aboriginal groups as being important.

For the components of the Project that have changed or are new from the previous project proposal, the EIS will:

- assess the potential effects of the Project on vegetation, including species known to be important to Aboriginal groups;
- assess the potential effects of the Project on wetland habitat and functions for wetlands in the project area with consideration of hydrology, biochemical cycling, wildlife habitat for migratory birds, SARA-listed species, COSEWIC-listed species, and climate) [9];
- document ambient concentrations of trace elements in wetland and upland vegetation to determine the potential for contamination of vegetation that may be consumed by wildlife or people; and
- document efforts to avoid sensitive communities, including wetlands, and develop mitigation strategies and measures to minimize or eliminate project effects on vegetation and ecosystem function.

With respect to the proposed transmission line, the EIS shall include a discussion of the following issues or reference the results of the previously assessed project shall the information contained therein still be relevant:

- The potential effects of invasive vegetation within the corridor and proposed methods of controlling invasive or undesired vegetation;
- Whether the proposed corridor will be seeded and any potential effects on range movement; and
- Identification of access requirements specific to timber harvesting activities within the transmission line and the identification of whether maintenance access routes will be required.

[9] For guidance, a "Wetland Ecological Functions Assessment: An Overview of Approaches" document is available at: http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=B8737F25-B456-40ED-97E8-DF73C70236A4

2.7.2.8 Wildlife

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on wildlife. Particular attention shall be paid to the effects on migratory birds, species at risk and their habitats. For effects on migratory birds and species at risk associated with wetlands, this assessment shall be a component of the broader wetland functions assessment required under Section 2.7.2.7. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS will address wildlife issues for the areas potentially affected by the Project and will include, but not be limited to, the following:

- the identification and assessment of the potential effects of the Project on ungulates , large carnivores, furbearers, small mammals, bats, raptors, waterfowl and other birds, reptiles, and amphibians that may be affected by the Project with particular attention to riparian, wetland, cliff, grassland and forest ecotone habitats, where applicable;
- a management strategy for dealing with potential human-bear and human-wolf conflicts;
- a summary of the amount and type of wildlife habitat potentially impacted by the Project. These summaries will include wildlife habitat suitability interpretations for ungulates (mule deer, moose, bighorn sheep), black bear, grizzly bear and species of conservation concern that are known or likely to occur in the Project area;
- an evaluation of the effect of the Project on the potential of wildlife mortality risk and movement patterns, and where a concern exists, development of mitigation measures to reduce negative effects on potentially affected wildlife species;
- an analysis to predict the anticipated effects on migratory birds based on habitat loss and alienation and contamination risk (e.g. TSF); and
- identification of mitigation measures to minimize or eliminate any adverse effects on wildlife, including species at risk, and migratory birds, on wildlife habitat, and to reduce potential bird mortality resulting from collisions with the transmission line, particularly in the vicinity of wetland, lake, riparian and grassland habitats and in any areas where migratory birds are known to concentrate.

Species at Risk

The EIS will address issues related to species at risk for the areas potentially affected by the Project, in particular for those project components and activities that have changed from the previous project proposal as well as new Project components and activities. This will include the identification and assessment of any changes to Schedule 1 of the SARA and their habitats and COSEWIC-listed species since the 2009/2010 review and postings on the SARA Public Registry of any recovery strategies/action plans. A description of the reasonable steps that will be taken to minimize adverse effects on individual members of

protected species shall be provided[10]. The assessment shall consider other existing projects of activities, or likely future projects or activities that will exacerbate pressures.

The EIS shall include an assessment of whether components of the Project that have changed or are new from the previous project proposal are likely to 'kill', 'harm', or 'harass' an individual of a protected species and affect its ability to carry out its life processes. A discussion on the likelihood of the Project to 'damage' or 'destroy' a protected habitat of a species at risk shall also be included.

In addition to those considerations listed in Section 2.7.1.5, when describing the effects the components of the Project that have changed or are new from the previous project proposal may have on species at risk and its habitat, the Proponent shall give consideration to the following categories[11]:

- the scale, location, and frequency of all phases of the Project, and the implication of these on each VEC;
- the immediate (short term) and delayed (long term) effects of the Project;
- habitat availability including the specific habitat element(s);
- species adaptability;
- species-specific habitat functions;
- the fidelity of the species to any habitat feature(s)/characteristic(s); and
- the resiliency of these habitat feature(s).

Based on determined likely effect(s), the EIS shall describe monitoring to determine the effectiveness of mitigation and the need for any further mitigation.

2.7.3 Socio-Economics, Culture and Human Health

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on socio-economics, culture and human health. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS shall include an assessment of potential effects of the Project to the social, economic, and cultural environment and to human health. In conducting the effects assessment, consideration shall be given to the guidance provided in the subsections below.

[10] Further guidance on addressing *Species at Risk Act* considerations is available at http://www.ec.gc.ca/nature/default.asp?lang=En&n=132ADBFC-1&parent=0C1743A2-4D49-4183-AC5F-1DE909D2FEB1.

[11] *The Species at Risk Act Environmental Assessment Checklists for Species Under the Responsibility of the Minister Responsible for Environment Canada and Parks Canada* provides advice on the main considerations to be incorporated when assessing effects on species at risk and the key steps needed to address the Species at Risk Act.

The social, economic and cultural impact assessment shall measure the environmental effects of the Project on individuals, organizations, communities, governments and any other affected stakeholders. Information on any predicted social, economic and/or cultural benefits of the Project will be considered by the responsible authorities in assessing the justifiability of any significant adverse environmental effects.

With respect to socio-cultural and socio-economic conditions, the Proponent is requested to clearly identify which social, economic and cultural issues relate to changes the Project is likely to cause in the environment. In considering the local impacts, the Proponent shall have due regard for the attitudes and perceptions of local residents, and how these are grounded in their culture, social organization, and historical experience. The Proponent shall consider the effects of any change the Project my cause in the environment and the capacity of individuals, communities and institutions to respond to those changes.

2.7.3.1 Effects on Resource Uses

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on resource uses. The EIS shall identify how the Project as proposed addresses significant adverse effects determined in the previous review. Particular attention shall be paid to the effects on the users of the meadows within the Teztan Yeqox (Fish Creek) watershed due to the loss of grazing land, on the Xeni Gwet'in/Sonny Lulua trapline and the tourism business operated by Taseko Lake Outfitters. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall clearly identify where the relevant information can be found.

The EIS will assess the potential effects of the Project, including both onsite and offsite components, on other regional economic activities identified, such as fishing, forestry, recreation and tourism, agriculture and other mining projects. The EIS will identify environmental effects of all phases of the Project on current and forecasted land uses in the region and propose monitoring, mitigation and compensation measures.

The EIS will also identify all land tenures and land uses potentially affected by all phases of the Project and will accurately delineate the boundaries of the mineral claims so that it is apparent where mine facilities are located relative to the claim boundaries. This identification will include potential or established Aboriginal rights, where available. For effects related to Aboriginal use, see Section 2.7.5 below. Overlays for the land tenure and land use maps and spatially referenced databases of proposed mine facilities (e.g. open pit, waste dumps, plant site, TSF) will be included in the EIS. The EIS shall also:

- compare current and forecasted land tenure and land uses within the proposed mine site area; and
- determine ancillary land uses/site developments that will be placed on Crown land and that are not covered by the permits, licenses or approvals issued by the province.

With respect to fishing, the EIS will provide an assessment of the effects of all phases of the Project on the commercial, recreational, and/or cultural lake and stream fisheries affected by the Project, and present mitigation and/or compensation plans. This assessment will provide results of visitor and creel surveys conducted to examine lake and streams use, catch success and evaluate the importance of the lake and streams in a local, regional and provincial context. The Proponent is encouraged to conduct these studies with First Nations, to the extent feasible.

With respect to outdoor recreation and tourism provide an assessment of the effects of all phases of the Project on these activities. In addition, the EIS will:

- identify commercial recreation tenures and activities affected by the Project;
- identify areas that have high wilderness recreational value affected by the Project;
- assess the importance of the areas affected, relative to regional use by residents and visitors; and
- provide an estimate of the value of recreation and tourism in both the project area and in the broader area, and assess the effect of the Project on park and recreation features and on tourism and recreation opportunities.

With respect to hunting, trapping and guiding provide an assessment of the effects of all phases of the Project on these activities. In addition, the EIS will:

- identify the number of trapping and guiding territories affected by the Project and describe the nature of the effect in terms of the specific trapline and guiding area affected;
- assess the importance of the areas affected relative to overall area traplines and guiding territories and, to the extent possible, quantify the effect on guide outfitters and trappers;
- propose mitigation measures for diminished wildlife and wilderness values of the guide outfitter territories and registered traplines affected, where appropriate; and
- identify potential effects on recreational hunting opportunities in the immediate and adjacent areas.

With respect to forestry, the EIS will identify the effect of the Project footprint on the forestry values and targets identified in regional and local resource management plans for the project area such as local and landscape affects to the Cariboo-Chilcotin Land Use Plan and the Community Forest. The assessment will identify how all phases of the Project will affect both current and future forest resources and uses. This assessment will include a determination of current and future forest resources and activities in the project area. These operations will be quantified to the extent practicable to provide a measure of the scale of activities.

2.7.3.2 Navigable Waters

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on navigable waters. The EIS shall identify how the Project as

proposed addresses significant adverse effects determined in the previous review. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

In order to complete an assessment of the potential effects of the Project on navigable waters, the EIS will:

- identify any Project components, including a description of any activities (e.g., dredging, alteration of water bed and/or water banks) that may affect waterways and water bodies and that fall outside the scope of the Minor Works and Water Order. For those components and activities that meet the Order, no NWPA approvals are required;
- describe any ancillary and temporary works (e.g., cofferdams, detours, fencing, temporary bridges, or bridge replacements along existing and proposed road alignments) including, where available, approximate dimensions;
- describe the anticipated direct and indirect effects on the waterways and water bodies, including, but not limited to, changes in water level and flow;
- provide information on current and/or historic usage of all waterways and water bodies that will be directly affected by the Project, including current Aboriginal uses, where available;
- describe the manner in which the tailings impoundment area may affect downstream surface water flows and water levels in all water bodies that could be impacted, and how this may impact navigation; and
- provide hydrology studies to determine if water levels in all water bodies that could be impacted will remain unaffected; and describe how affected navigation will be restored.

Upon receipt of the above information, the Navigable Waters Protection Division of Transport Canada will make a determination of the navigability of any waterways or water bodies affected by the Project and appropriate measures or approvals that would be required in accordance with the NWPA.

2.7.3.3 Human Health

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on human health. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS shall include consideration of the potential effects of all project phases (i.e. construction, operation, closure and post-closure) when assessing impacts to human health. The EIS will examine the potential effects of the Project on human health, specifically related to potential chemical releases to the environment. The assessment

will involve both quantitative and qualitative risk assessment methods which will be detailed and include consideration of the following:

- risks to human health from effects on water supply and quality for local residents and communities relating to both drinking and recreational use (e.g. Fish Lake), and for drinking water at the mine site, taking into account potential health risks from discharges (if any);
- effect of the Project on air quality around the mine site through use of Dispersion Models, including worker camps, and in the broader study area where human receptors may be present (e.g. Fish Lake), and potential health risks from proposed air emissions and dust generated at the mine and by traffic related to the mine;
- accepted standards or guidelines for protection of human health (e.g. Canada-wide Standards, National Ambient Air Quality Objectives, provincial regulations) for specific criteria air contaminants, including, but not limited to, the following:
    - sulphur oxides [SOx],
    - nitrogen oxides [NOx],
    - particulate matter [PM] including total PM, PM10, and PM2.5,
    - volatile organic compounds [VOCs],
    - carbon monoxide [CO],
    - ammonia [NH3],
    - ground-level ozone [O3], and secondary particulate matter [secondary PM]),
    - air pollutants on the *List of Toxic Substances* in Schedule 1 of the *Canadian Environmental Protection Act, 1999* (Canadian Environmental Protection Act Registry, 1999), and
    - diesel PM;
- effect of noise duration and character (e.g. tonal or impulsive) due to Project activities during all phases and an evaluation of the severity of predicted changes in noise levels and how they may affect human health including for users of Fish Lake. Study must include impacts of blasting activity on human receptors;
- mitigative measures and monitoring of air quality, water quality, noise and country foods, as appropriate;
- standards/guidelines for noise and blasting shall be referenced. Noise impacts on Aboriginal cultural and spiritual activities in the Project area and Fish Lake in particular shall be identified and assessed;
- risks to human health from current and post-closure consumption of country foods (fish, wildlife, plants, traditional medicines etc.) by any potential stakeholders in the Project area who might be exposed to:
    - pesticides/herbicides used at the mine site or along the transmission line corridor,
    - seepage, runoff or effluent discharges from the mine site (if any), and impounded water at the mine site,
    - metal contaminated dust and soil,

  - contaminated vegetation (including traditional medicine bases) growing within the projected dust fall area including access roads and transmission line right of way, and
  - metal levels in fish in all watersheds within the Project area with fish sampling for metals including but not limited to areas known to be harvested for consumption;
- collection of baseline data on metal levels in tissue of wild game (or representative sentinel animal species) with data assessed for risks to human health;
- identification of which human receptors would be most affected including those that are most susceptible to potential changes in air quality, drinking water and recreational water quality, noise, and chemical contaminants in country foods; and
- quantification of the human health risk from contaminated country foods taking into consideration Aboriginal people as a special sub-population with unique consumption patterns and risk sensitivities. Study needs to incorporate information gathered from a variety of sources including traditional use studies, Aboriginal consultations, consumption surveys, and baseline and monitoring data for chemical contaminants.

The Proponent shall refer to Health Canada's document *Useful Information for Environmental Assessments* for more details on assessing and incorporating human health effects in the EIS.

2.7.4 Physical and Cultural Heritage Resources

Physical and cultural heritage resources shall be considered in the EIS. According to the Agency guidance document *Reference Guide: Assessing Environmental Effects on Physical and Cultural Heritage Resources* (April 1996), a cultural heritage resource is a human work or a place that gives evidence of human activity or has spiritual or cultural meaning, and that has historic value. Cultural heritage resources are distinguished from other resources by virtue of the historic value placed on them through their association with an aspect(s) of human history. This interpretation of cultural heritage resources can be applied to a wide range of resources, including, cultural landscapes and landscape features, archaeological sites, structures, engineering works, artefacts and associated records.

When undertaking the effects assessment on cultural heritage resources, the Proponent shall follow the Guiding Principles outlined earlier in these Guidelines.

2.7.4.1 Archaeology

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted on archaeology. Particular attention shall be paid to the implementation of the recommendations of the Panel in the 2009/2010 review. Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

Referencing the recommendations of the archaeological assessment report, the EIS assess the effects of the Project on existing archaeological resources and will include proposed measures to mitigate effects to archaeological resources
These measures may include:

- the identification of archaeological resources that can be preserved intact through project design modifications to avoid and protect archaeological resources;
- an assessment of the potential effects of those Project components and activities that have changed from the previous project proposal as well as new Project components and activities on known and potential built heritage and cultural heritage landscapes;
- site-specific discussions of the process used to select an impact management action from the possible alternative actions;
- justification for selection of preferred mitigation measure; and
- recommendations for a tentative schedule for conducting surveillance or monitoring during project implementations.

2.7.5 Aboriginal Interests

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether these changes will result in environmental effects that could adversely impact potential or established Aboriginal rights or title.

The Proponent shall provide an assessment of the potential environmental effects on the current use of lands and resources for traditional purposes by Aboriginal persons, and associated impacts to potential or established Aboriginal rights or title and, where appropriate, other issues of concern to Aboriginal groups.

The Proponent is expected to use existing information, submissions, testimony, findings and conclusions generated as part of the previous review. In describing key issues or concerns raised by Aboriginal groups and how the Project addresses the findings of the previous panel regarding significant adverse impacts to potential or established Aboriginal rights or title, the Proponent shall provide the issues and responses in both narrative and tracking table format. Any new information that is available shall also be incorporated into the assessment of effects of the Project, and identify any mitigation measures that it might consider appropriate.

The Proponent shall identify:

- specific issues and concerns raised by Aboriginal groups in relation to the Project;
- any potential impacts that the Project may have on potential or established Aboriginal rights or title and the measures to prevent or mitigate these potential impacts;
- resolution of issues and concerns raised by Aboriginal peoples;
- any potential social and/or economic impacts or benefits to Aboriginal groups that may arise as a result of the Project;

- any potential effects on current uses of land and resources by Aboriginal groups for traditional purposes including, but not limited to, hunting, fishing, trapping, cultural and other traditional uses of the land (e.g. collection of medicinal plants, use of sacred sites);
- measures to avoid, mitigate, or accommodate effects on the current use of lands and resources for traditional purposes by Aboriginal peoples;
- any effects of alterations to access into the area on Aboriginal groups; any effects of the Project on heritage and archaeological resources in the project area that are of importance or concern to Aboriginal groups; and
- the residual impacts of any effects identified above on potential or established Aboriginal rights and title.

2.7.6 Accidents and Malfunctions

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether changes will result in changes to the environmental effects previously predicted that may result from accidents and malfunctions that may occur in connection with the components and activities associated with the new MDP. The EIS 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 potential environmental effects), the worst case scenarios and impacts;
- describe the sensitivity of receptors in the project area to potential accidents and malfunctions;
- explain the potential 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 malfunction and/or accidental event;
- identify the capabilities, resources and equipment available to safely respond to any accidents and malfunctions; and
- describe the planned response such as communication between stakeholders, and alerting and warning personnel working on the mine site. The EIS will also describe the contingency, clean-up or restoration work that would be required immediately following or in the long-term after the postulated malfunctions and accidents.

The assessment of the environmental effects of potential accidents and malfunctions shall include, but is not limited to those considerations associated with the following project activities or eventualities:

- waste management and disposal (solid and liquid);
- transportation of construction materials and Project personnel if changed from previously assessed project;
- handling and use of chemicals on-site;

- evaluation of worst case scenarios (e.g. tailings impoundment structural failure, accidental explosion, earthquake, or landslide into the tailings impoundment);
- premature closure of the Project during any phase;
- controlled and uncontrolled discharges to surface water and groundwater (e.g. seepage loss reporting to surface water via groundwater; and
- any other Project component or system that has the potential, through accident or malfunction, to adversely affect the natural environment.

The Proponent shall consult the *Canadian Dam Association Guidelines* for guidance on the design of impoundment structures. Waste dumps and stockpiles shall be designed in accordance with the *Interim Guidelines of British Columbia Waste Rock Pile Research Committee*. A conceptual Environmental Protection Plan to address potential accidents and malfunctions will be included in the EIS.

2.7.7 Effects of the Environment on the Project

The EIS shall consider any change to the Project that may be caused by the environment. Where information provided in the previously submitted EIS for the previous project proposal is still relevant for the Project, the Proponent will clearly identify where the information can be found. The assessment shall take into account how local water conditions and natural hazards, such as severe weather conditions and external events could adversely affect the Project. Longer-term effects of climate change shall also be discussed up to the end of the projected post-closure phase of the Project.

The EIS will provide details of a number of planning, design and construction strategies intended to minimize the potential effects of the environment on the Project. The EIS will consider the following types of natural environmental issues or events that could have an effect on the Project:

- climate change, including the potential long term effects of changing groundwater, surface water, and precipitation levels on maintaining an adequate water cover and treatment in the TSF under both wet and dry scenarios;
- extreme weather (severe rainstorms, snow storms, flood events, wind, drought);
- forest fires; and
- seismic activity.

Consideration of applicable climate elements shall include, but not be limited to:

- an estimate of its potential effects on the Project;
- an estimate of how sensitive the Project is to climate variability;
- a discussion of climate data used and limitations on its predictive capacity; and
- changes in lake levels and stream flow.

The sensitivity of the Project to long-term climate variability and effects shall be identified and discussed. The Agency's Procedural Guide, *Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners*

(2003), provides guidance for incorporating climate change considerations in an EA.

2.7.8 Capacity of Renewable Resources

The EIS shall identify how the Project as proposed has changed from the previous project proposal and whether those changes are likely to affect the capacity of renewable resources to meet the needs of present and future generations. Particular attention shall be paid to:

- the ability of fisheries resources in the Teztan Yeqox (Fish Creek) watershed; and
- the South Chilcotin grizzly bear population to meet the needs of present and future generations as concluded by the previous panel.

Where the Proponent has determined that environmental effects remain as identified in the previous project proposal, the Proponent shall demonstrate a rationale for that conclusion and refer to relevant information from the previous review, as appropriate or as applicable.

The EIS shall identify renewable resources likely to be significantly affected by the Project, and describe how the Project could affect their present and future use. The EIS shall also identify and describe any criteria used in considering sustainable use of the renewable resources.

2.8 ENVIRONMENTAL MANAGEMENT

The EIS will describe the Proponent's EMS for the Project. The objective of the EMS is to provide a consistent approach to environmental management through resource allocation, the assignment of responsibilities and ongoing evaluation of environmental practices, procedures and processes. The EMS is part of an overall corporate management system which includes organizational structure, planning and training activities, staff responsibilities, practices, procedures and resources for developing, implementing, reviewing and maintaining environmental policies associated with the Project. The focus of these considerations shall be on those aspects of the Project that have changed or are new from the previous Project proposal and on corresponding changes to potential environmental effects.

2.8.1 Environmental Management Plans

The purpose of the EMPs is to ensure that proper measures and controls are in place in order to prevent or decrease the potential for environmental degradation during all phases of project development, and to provide clearly defined action plans and emergency response procedures to account for human and environmental health and safety. Analysis of the data obtained as a result of enacting the EMPs can be used to confirm any project specific assumptions and make corrective plans where necessary. The EMPs shall be used as a means of implementing the mitigation measures identified through the environmental assessment and any follow-up requirements. The EMPs will serve to provide guidance on specific actions and activities that will be implemented to decrease the potential for environmental degradation during construction and operation, and to clearly define the Proponent's ongoing environmental commitment.

The EIS shall describe the conceptual EMPs proposed for all stages of the Project and include a commitment by the Proponent to implement the EMPs should the Project proceed. The conceptual plans will include stated objectives and proposed methods for implementing the plans. The finalization of detailed EMPs will occur after the EA through consultation with federal and provincial government agencies, Aboriginal groups, the public and other stakeholders and must be consistent with the information presented in the EIS. The EMPs will incorporate the results of the EIS with respect to identifying areas which would benefit from the development of an EMP and identifying mitigation and follow-up and monitoring requirements. The EMPs will provide direction on the following, as appropriate for the Project phase:

- construction management;
- access management;
- tailings impoundment operations plan;
- materials handling (non-mined materials);
- emergency response and spill contingency, including measures taken to prevent spills, such as policies, procedures and protocols;
- geotechnical stability monitoring;
- soil salvage and storage plan;
- surface erosion prevention and sediment control;
- air quality management;
- noise Management;
- water quality/quantity management and monitoring;
- solid waste management;
- ARD/ML management for mine waste;
- vegetation management, including invasive species;
- protection of migratory birds
- bear-human and wolf-human conflict management;
- cultural and heritage protection;
- reclamation and closure;
- follow-up and monitoring;
- surface water and groundwater quality and quantity management, and monitoring; including controlled and uncontrolled seepage, run-off, and discharge;
- follow-up , compliance and effects monitoring of groundwater and surface water quality and quantity during closure and post-closure; and
- others, as appropriate.

The EIS shall also identify any EMPs or other mitigation tools that can be used to minimize potential effects on Aboriginal groups. These will be developed in consultation with the Aboriginal groups, and may include:

- archaeological and heritage resources monitoring plan;

- traditional use monitoring plan; and
- others, as needs are identified.

2.8.2 Decommissioning and Closure Plan

The EIS will include details of a conceptual decommissioning, reclamation and closure plan for the components of the Project that have changed or are new, consistent with the *Health, Safety and Reclamation Code for Mines in British Columbia*. The plan will outline specific actions and activities that will be implemented to minimize the potential for long-term environmental degradation, and clearly define the Proponent's ongoing environmental commitments. The plan will include information on:

- proposed end land use objectives for the various mine site components;
- productivity or capability objectives and the general means by which these objectives will be achieved;
- plans for removal of structures and equipment and remediation of contaminated soils;
- plans for reclaiming roads and other linear disturbances;
- waste rock dump and stockpile reclamation plans, including final configurations, proposed re-sloping, soil replacement, and re-vegetation methods;
- tailings impoundment reclamation plans, including final impoundment configuration and water levels, re-sloping, soil replacement and re-vegetation methods;
- open pit filling times and final configuration;
- site water management plans for all facilities and including re-establishment of post-mine watercourses;
- concepts for monitoring and research programs that will assess reclamation success and for meeting overall closure objectives;
- conceptual monitoring programs for permanent structures to ensure long-term geotechnical stability;
- conceptual long-term monitoring programs for surface and groundwater quality; and
- management plans for final closure as well as temporary closure and/or early permanent closure.

2.8.3 Monitoring and Follow-up Programs

The Proponent shall include a framework upon which compliance as well as follow-up and effects monitoring will be conducted and evaluated throughout the life of the Project, including the post-closure phase, should the Project proceed. It is noted that the *Species at Risk Act* establishes obligations to ensure that measures are taken to monitor the adverse effects of a project on listed wildlife species and their critical habitat. The focus of these considerations shall be on those aspects of the Project that have changed or are new from the previous Project proposal and on corresponding changes to potential environmental effects.

Compliance Monitoring Program

The EIS shall describe a conceptual compliance monitoring program for the Project. Compliance monitoring verifies whether the Proponent has implemented the required mitigation measures and fulfilled the provisions of the environmental assessment with respect to public consultation, requirements for additional studies or work to be completed and all other commitments, including those made by the Proponent as part of the 2009/2010 review of the previous project proposal. The Proponent shall describe the compliance monitoring methods to be used, including reporting frequency, duration, methods and format.

The results of the compliance monitoring program will be used in the follow-up and effects monitoring program, as outlined below.

Follow-up and Effects Monitoring Program
The EIS shall outline a follow-up and effects monitoring program, designed to verify the accuracy of the conclusions of the environmental assessment and to determine the effectiveness of the measures implemented to mitigate the adverse environmental effects of the Project. The follow-up and effects monitoring program will also support the EMS used to manage the environmental effects of the Project and support the implementation of adaptive management measures to address previously unanticipated adverse environmental effects. The EIS will discuss follow-up and effects monitoring program objectives, which shall include confirming the effectiveness of mitigation measures, confirming that assumptions made in the EIS were appropriate and verifying predicted effects.

The follow-up and effects monitoring program shall be designed to incorporate pre-Project information which would provide the baseline data, compliance data such as established thresholds against which hypotheses would be tested, regulatory documents, standards or guidelines, and real time data which would consist of observed data gathered in the field. Environmental assessment effects predictions, assumptions and mitigation actions that are to be tested in the follow-up and effects monitoring program shall be converted into field-testable monitoring objectives, as discussed below.

The description of the follow-up program shall include any contingency procedures/plans or other adaptive management provisions as a means of addressing unforeseen effects or for correcting exceedances as required to comply with or to conform to benchmarks, regulatory standards or guidelines.

The follow-up and effects monitoring program shall describe roles and responsibilities for the program and its review process, by both peers and the public.

The EIS shall provide a discussion on the need for, and requirements of, a follow-up and effects monitoring program and include:

- the need for such a program and its objectives;
- a tabular summary and explanatory text of the main components of the program, including:
    - an identification of the environmental variable to be monitored and the

indicators to be used,
    - discussion on which of the program objectives the activity is fulfilling (i.e. confirming mitigation, confirming assumptions; verifying predicted effects),
- structured description of the sampling or survey methodology, frequency and duration of monitoring that will be employed;
- roles to be played by the Proponent, regulatory agencies, Aboriginal groups and others in such a program;
- possible involvement of independent researchers;
- the sources of funding for the program; and
- information management and reporting.

The follow-up program shall be described in the EIS in sufficient detail to allow independent judgment as to the likelihood that it will deliver the type, quantity and quality of information required to reliably verify predicted effects (or absence of them), confirm assumptions from the environmental assessment and confirm the effectiveness of mitigation.

The EIS shall outline any process for handling issues that are identified by public, Aboriginal groups, regulatory agencies and other groups during Project construction, operation, and during decommissioning and abandonment of temporary facilities.

2.9 TABLE OF COMMITMENTS

The EIS shall summarize the Proponent's key commitments in implementing mitigations, contingency plans, monitoring, taking corrective actions, reclaiming the site and providing offsets for unavoidable Project effects. The summary shall include commitments that are applicable to the Project such as:

- Proponent's commitments as outlined in the BC Environmental Assessment Certificate;
- commitments made by Taseko as part of the 2009/2010 review;
- any proposed changes to existing commitments in the BC Environmental Assessment Certificate;
- any new commitments proposed by the Proponent relevant to the changes made to project components and activities;
- a summary of all significant management commitments;
- any applicable standards, legislation and/or policies;
- a discussion of any special management practices or design feature commitments; and
- a table summarizing the timing and responsibility for each of the actions for which a commitment has been made.

2.10 SUMMARY OF RECOMMENDATIONS

Beyond those commitments included in the BC Environmental Assessment Certificate the EIS shall summarize the Panel's recommendations provided in the 2010 panel report for the previous project proposal. The EIS shall explain how the Proponent will incorporate those recommendations relating to the management of environmental effects as a result of the change to components and activities associated with the new MDP. In addition, the Proponent shall identify if the implementation of certain recommendations will conflict with the project.

2.11 ASSESSMENT SUMMARY AND CONCLUSION

This section of the report shall summarize the overall findings with emphasis on the main environmental issues identified.

2.12 REFERENCES

Agriculture and Agri-food Canada. 1998. *The Canadian System of Soil Classification*. 3rd Ed. Agriculture and Agri-Food Canada Publication 1646. National Research Council of Canada Research Press.

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Fisheries and Oceans Canada. 1986. *Policy for the Management of Fish Habitat.*

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APPENDIX A: List of Relevant Legislation, Policies, Strategies and Agreements

In addition to environmental assessment requirements, relevant statutes, agreements, and policies may include most (if not all) of the following, as well as others:

Federal Statues/Policies:

- *Fisheries Act*
- *Metal Mining Effluent Regulations*
- *Migratory Birds Convention Act*
- *Species at Risk Act*
- *Navigable Waters Protection Act*
- *Canadian Environmental Protection Act*
- *Explosives Act*
- *Transportation of Dangerous Goods Act*
- *Canada Transportation Act*
- *Radio Telecommunications Act*
- Federal Policy on Wetland Conservation, 1991
- Policy for the Management of Fish Habitat, 1986

Provincial Statutes/Policies:

- *Mines Act*;
- *Mineral Tenure Act;*
- *Environmental Management Act* ;
- *Water Act*;
- *Wildlife Act of British Columbia*;
- *Identified Wildlife Management Strategy*
- *Land Act*;
- *Land Title Act;*
- *Forest Act*;
- *Forest Range and Practices Act*;
- *Forest Practices Code of British Columbia Act*;
- *Highway Ac*t;
- *Health Act*;
- *Protection of Drinking Water Act; and*
- *Heritage Conservation Act*.

International/ Domestic Agreements:

- Convention on Biological Diversity, 1993