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5.2.1 Identification and Selection of Valued Components

The approach of selecting Valued Components (VCs) is consistent with the Guideline for the Selection of Valued Components and Assessment of Potential Effects (British Columbia Environmental Assessment Office (BC EAO), September 9, 2013) and requirements under the final Environmental Impact Statement Guidelines (Canadian Environmental Assessment Agency (Agency), 2013) including the terminology and definitions for VCs and indicators. The purpose of this evaluation process is to select VCs that reflect the types of effects identified in the relevant legislation, revealed and identified though the issue scoping process, and to ensure effective, efficient, and focused analysis of potential effects from the proposed Blackwater Gold Project (the Project) (BC EAO, 2013).

Section 4.2 describes the methods used for determination of selected VCs. The process involves three steps:

- Identify Candidate VC;
- Evaluate Candidate VC; and
- Select Appropriate VCs.

The first step is the identification of the candidate VCs, which involves issue scoping. Issue scoping is done by identifying the interaction of the Project components or activities with the five pillars (Environmental, Economic, Social, Heritage, and Health), through consultation with stakeholder groups and by applying professional judgement taking into account environmental assessments conducted in the past on similar projects. Baseline characterization results provide the information to identify relevant candidate VCs representative of the five pillars.

The BC EAO established a Working Group (WG) consisting of provincial and federal regulatory agencies, Aboriginal groups, and identified stakeholder groups likely to be involved in, or affected by the Project. The WG's involvement in the pre-Application stage has focused primarily on reviewing the draft Application Information Requirements (dAIR) that includes information on the candidate VCs for the Project. The public also provided comments on the dAIR. The comments from the WG and public on the candidate VCs have been incorporated into the issues scoping process. In addition, the Project-specific issues are generally indicative of local and regional values held by the public, First Nations, and other stakeholders. Issues tracking tables that document issues and concerns raised during the preparation of the AIR and Application are presented in **Appendix 3.1.3A** and **Appendix 3.1.3B** of this section. A summary of consultations is provided in **Appendix 3.1.3C.**

Table 5.2.1-1 includes the rationale for choosing each candidate VC as a result of the issue scoping, including details on the interactions between the candidate VC and Project activities.

The second step is the evaluation of the candidate VCs to selected VCs. The candidate VCs were examined to confirm if they would interact with Project components and activities, and if those interactions would result in an environmental effect. Key interactions were identified as those that had a greater potential to result in adverse effects of higher significance. The evaluation also used

the VC attributes and key questions from the Guideline for the Selection of Valued Components and Assessment of Potential Effects, as presented in **Table 5.2.1-2**.

In the evaluation process, if all attributes and questions were confirmed and answered with "Yes," the candidate VC becomes a selected VC. If "No" was answered to one or more of the attributes or evaluation questions, the candidate VC was not considered as a selected VC, unless it was a confirmed to be a component of concern. The outcome of the interactive process is a shorter list of VCs that appropriately reflects the concerns raised and the aspects of the broader environment that are of most value to society. This list allows the assessment to focus on key issues for decision-makers and to address key concerns. **Section 4, Table 4.3-2** (Project Component and Activity Interaction Matrix) shows the potential key and moderate interactions between Project activities and components of the selected VCs.

The evaluation resulted in the following selected VCs for the Atmospheric and Acoustic Environment subject area:

- Noise and Vibration;
- Air Quality; and
- Climate Change.

Indicators are identified as required to further focus the analysis of interactions between the Project and the selected VC. Indicators are aspects of the VC used to understand and evaluate the potential effect on the VC. They may comprise a species group, guild, or sub-population, or some other functional aspect, such as habitat, that is important to the integrity of the VC.

Table 5.2.1-1: Candidate Valued Component Rationale

Valued Component Candidates	Interaction with Project Activities	First Nations[1]	The Public and Other Stakeholders[2]	EIS Guidelines
Noise and vibration	Noise and vibration are recognized effects originating from Project activities	No comments noted to date	The general public raised concern about the impact of noise and increased human activity related to power line construction on wildlife	9.1.2 Biophysical Environment – Atmospheric Environment and Climate Section 9.1.2 Biophysical Environment - Fish and Fish Habitat
Climate change	Project-related GHG emissions generated from Project activities	Natural Resources Lhoosk'uz Dene Nation	BC MFLNRO recommends looking at effects of climate change on lower elevation habitats and therefore effects on caribou (meeting with BC MFLNRO, Ecofor, AMEC 12 December 2011) Burns Lake identified GHG issues (e-mail from Village of Burns Lake 31 July 2012)	9.1.2 Biophysical Environment – Atmospheric Environment and Climate
Air quality	Project-related emissions of criteria air contaminants including particulate matter ($PM_{2.5}$ and PM_{10}) and metals, nitrogen oxides (NO_{x}-), sulphur dioxide (SO_x), and dustfall	Nazko First Nation; Saik'uz First Nation	BC MOE repressed concern regarding air quality monitoring requirements associated with the camp incinerator at the mine camp (phone call 26 April 2012)	9.1.2 Biophysical Environment – Atmospheric Environment and Climate

Note: [1] "First Nation" concerns are from comments in the tracking tables in reference to Version A through F of the dAIR.
[2] "The Public and Other Stakeholders" comments do not include comments specific to study design, methods proposed for sampling. Concerns are from comments in the tracking tables in reference to Version A through F of the dAIR.
BC MFLNRO = British Columbia Ministry of Forests, Lands and Natural Resource Operations; BC MOE = British Columbia Ministry of Environment; EIS = Environmental Impact Statement; GHG = greenhouse gas.
Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs

Table 5.2.1-2: Evaluation of Candidate Valued Components

Subject Area	Candidate VC	Attributes					Evaluation Key Questions				
		Relevant[1]	**Comprehensive[2]**	**Representative[3]**	**Responsive[4]**	**Concise[5]**	**Measurable[6]**	**Grouping[7]**	**Ultimate Receptor[8]**	**Component of Concern [9]**	**Selected VC (Included or Excluded)**
Atmospheric and Acoustic Environment	Noise and vibration	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Atmospheric and Acoustic Environment subject area.	Y – VC is illustrative of the natural and human environments to be possibly affected by the proposed project.	Y – VC is responsive to the potential project effects.	Y – Clear interaction with project activities and/or project component.	Y – VC is measureable by using appropriate indicator such as over all sound level.	Y – The potential effects of the candidate VC cannot be effectively represented by another VC.	N – VC is an intermediate receptor not the end point in the effects pathway.	Y – VC is raised as a concern though the issues scoping process.	Y – Noise and vibration is a selected VC. Included
	Climate change	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Atmospheric and Acoustic Environment subject area.	Y – VC is illustrative of the natural and human environments to be possibly affected by the proposed project.	Y – VC is responsive to the potential project effects	Y – Clear interaction with project activities and/or project component.	Y – VC is measureable by using appropriate indicator such as GHG emissions.	Y – The potential effects of the candidate VC cannot be effectively represented by another VC.	N – VC is an intermediate receptor not the end point in the effects pathway.	Y – VC is raised as a concern though the issues scoping process.	Y – Climate change is a selected VC. Included
	Air quality	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Atmospheric and Acoustic Environment subject area.	Y – VC is illustrative of the natural and human environments to be possibly affected by the proposed project.	Y – VC is responsive to the potential project effects	Y – Clear interaction with project activities and/or project component.	Y – VC has measureable parameters.	Y – The potential effects of the candidate VC cannot be effectively represented by another VC.	N – VC is an intermediate receptor not the end point in the effects pathway.	Y – VC is raised as a concern though the issues scoping process.	Y – Air quality is a selected VC. Included

Note: [1] **Relevant** to one of the five pillars (environmental, economic, social, heritage and health) and clearly linked to the values reflected in the issues raised in respect to the project.
[2] **Comprehensive**, taken together, the VCs selected for an assessment should enable a full understanding of the important potential effects of the project.
[3] **Representative** of the important features of the natural and human environment likely to be affected by the project.
[4] **Responsive** to the potential effects of the project.
[5] **Concise**, so the nature of the project-VC interaction and the resulting effect pathway can be clearly articulated and understood, and overlapping or redundant analysis is avoided.
[6] **Measurable**, the potential effects of the project on the VC can be measured and monitored.
[7] The potential effects of the candidate VC cannot be effectively represented by another VC.
[8] **Ultimate Receptor**, the ultimate receptors are humans.
[9] **Component of Concern**, includes issues and/or legislation raised by FNs, Federal or Provincial governments.
GHG = greenhouse gas; N = No; VC = Valued Component; Y = Yes
Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs

To be effective and useful, indicators must have the following attributes from the Guideline for the Selection of Valued Components and Assessment of Potential Effects. The rationale for the indicators proposed for the selected VCs is shown in **Table 5.2.1-3**.

Table 5.2.1-3: Selected Valued Components and Rationale of Indicators and/or Factor

Pillar	Valued Components	Indicators and/or Factors for Assessment	Rationale of Indicator and/or Factor[(1)]
Environmental	Noise and vibration	Overall sound levels	The selected indicator is a measureable parameter and chosen because it can capture potential effects of the Project on noise and vibration.
	Climate change	Greenhouse gas emissions	The selected indicator is a measureable parameter and chosen because it can capture potential effects of the Project on climate change.
	Air quality	Measured parameters (e.g., particulate matter and combustion gases)	The indicator parameters that are appropriate for this VC for this assessment, was assessed by estimating Project emissions, predicting changes in the ambient concentrations of sulphur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter (PM, $PM_{2.5}$, and PM_{10}) using dispersion modelling, and comparing them to listed regulatory objectives and standards.

Note: [(1)] Included indicators follow these attributes: *Relevant*: indicators must relate directly or indirectly to the integrity of the selected VC; *Practical:* there must be a practical way to evaluate the indicator, using existing or achievable data, predictive models, or the means; *Measurable:* the measurement of the selected indicator must generate useful data hat inform our understanding of the potential effect on the VC; *Responsive* to the potential effects of the project; *Predictable* in terms of their response to the project.
Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs