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### 5.4.1 Identification and Selection of Valued Component

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 through 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 5.4.1-1** 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

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the VC attributes and key questions from the Guideline for the Selection of Valued Components and Assessment of Potential Effects, as is presented in **Table 5.4.1-2**.

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 fourteen selected VCs for the Terrestrial Environment Effects Assessment, as follows:

- Physiography and Topography
- Surficial Geology and Soil Cover
- Soil Quality
- Ecosystem Composition
- Plant Species and Ecosystems at Risk
- Amphibians
- Water Birds
- Forest and Grassland Birds
- Moose
- Caribou
- Grizzly Bear
- Furbearers
- Bats
- Invertebrates

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**Table 5.4.1-1: Candidate Valued Component Rationale**

Valued Component Candidates	Interaction with Project Activities	First Nations <sup>(1)</sup>	The Public and Other Stakeholders <sup>(2)</sup>	EIS Guidelines
Physiography and Topography	<ul style="list-style-type: none"> <li>Alteration of physical topography and re-grading of the site</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Terrestrial Environment-Geology and Geochemistry</li> </ul>
Surficial Geology and Soil Cover	<ul style="list-style-type: none"> <li>Conversion of baseline surficial geology to post mine materials by the removal of soil cover during the construction and operations phases; changes from baseline conditions</li> </ul>	Sai'kuz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Terrestrial Environment-Geology and Geochemistry</li> <li>9.1.2 Biophysical Environment -Surficial Geology</li> </ul>
Soil Quality	<ul style="list-style-type: none"> <li>Removal and storage of reclamation material; changes in soil quality with time; potential changes in baseline soil metal levels</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Terrestrial Environment-Geology and Geochemistry</li> </ul>
Ecosystem Composition	<ul style="list-style-type: none"> <li>Site clearing and removal of vegetation for Project facilities have the potential to affect ecosystem composition</li> </ul>	Ulkatcho First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment -Ecosystems (grassland, temperate forest, etc.)</li> <li>9.1.2 Biophysical Environment – Flora</li> <li>7.1.1 Valued components</li> </ul>
Plant Species and Ecosystems at Risk	<ul style="list-style-type: none"> <li>Site clearing and removal of vegetation for Project facilities has the potential to directly affect plant species at risk as well as the ecosystems supporting plant species ecosystem communities</li> </ul>	Sai'kuz First Nation Ulkatcho First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Ecosystems (grassland, temperate forest, etc.)</li> <li>9.1.2 Biophysical Environment – Flora</li> <li>7.1.1 Valued components</li> </ul>
Amphibians	<ul style="list-style-type: none"> <li>Amphibians such as western toad use wetlands and riparian areas in the Project footprint</li> </ul>	Sai'kuz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Water Birds	<ul style="list-style-type: none"> <li>Water birds such as ring-necked duck use suitable habitat, forest wetlands, riparian areas within the footprint of Project facilities and activities</li> </ul>	Lhoosk'uz Dene Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Forest and Grassland Birds	<ul style="list-style-type: none"> <li>Songbirds and raptors such as the olive-sided flycatcher use suitable habitat, forest wetlands, riparian areas within the footprint of Project facilities and activities</li> </ul>	Sai'kuz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Moose	<ul style="list-style-type: none"> <li>Mammals such as moose (<i>Alces alces</i>) may use forested and wetland areas in the Project footprint; Proposed mine site area is located adjacent to UWR</li> </ul>	Saik'uz First Nation Stellat'en First Nation Skin Tyee	Denis and June Wood	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Caribou	<ul style="list-style-type: none"> <li>Mammals such as caribou (<i>Rangifer tarandus</i>) may use forested and wetland areas in the Project footprint Proposed mine site area is located adjacent to UWR</li> </ul>	Lhoosk'uz Dene Nation Ulkatcho First Nation Saik'uz First Nation Stellat'en First Nation Skin Tyee Nazko First Nation	BC MFLNRO Denis and June Wood	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Grizzly Bear	<ul style="list-style-type: none"> <li>Mammals such as grizzly bear (<i>Ursus arctos</i>) may use forested and wetland areas in the Project footprint</li> </ul>	Saik'uz First Nation Stellat'en First Nation Skin Tyee	Nechako Valley Sporting Association	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Furbearers	<ul style="list-style-type: none"> <li>Furbearers such as marten (<i>Martes americana</i>) may use forested and wetland areas in the Project footprint</li> </ul>	Lhoosk'uz Dene Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Bats	<ul style="list-style-type: none"> <li>Mammals such as northern myotis (<i>Myotis septentrionalis</i>) may use forested and wetland areas in the Project footprint</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Invertebrates	<ul style="list-style-type: none"> <li>Invertebrates use areas in the footprint of Project facilities and activities</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
SARA-Listed Species	<ul style="list-style-type: none"> <li>SARA-listed species use areas in the footprint of Project facilities and activities</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Species at Risk and Species of Conservation Concern</li> <li>10.1.2 Changes to the environment – Changes to components of the environment within federal jurisdiction</li> </ul>
Reptiles	<ul style="list-style-type: none"> <li>Reptiles may use areas in the footprint of Project facilities and activities</li> </ul>	Saik'uz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>
Woodpeckers	<ul style="list-style-type: none"> <li>Woodpeckers may use areas in the footprint of Project facilities and activities</li> </ul>	Saik'uz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment – Birds, Wildlife and their Habitat</li> </ul>
Eagles	<ul style="list-style-type: none"> <li>Eagles may use areas in the footprint of Project facilities and activities</li> </ul>	Saik'uz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>

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Valued Component Candidates	Interaction with Project Activities	First Nations <sup>(1)</sup>	The Public and Other Stakeholders <sup>(2)</sup>	EIS Guidelines
Sharp-tailed Grouse	<ul style="list-style-type: none"> <li>Sharp-tailed grouse may use areas in the footprint of Project facilities and activities</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>
Deer	<ul style="list-style-type: none"> <li>Deer may use areas in the footprint of Project facilities and activities</li> </ul>	Saik'uz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>
Wolf	<ul style="list-style-type: none"> <li>Wolf may use areas in the footprint of Project facilities and activities</li> </ul>	Ulkatcho First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>
Mosquitoes and Bees	<ul style="list-style-type: none"> <li>Mosquitoes and bees may use areas in the footprint of Project facilities and activities</li> </ul>	Saik'uz First Nation	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>
Short-eared Owl	<ul style="list-style-type: none"> <li>Short-eared owl may use areas in the footprint of Project facilities and activities</li> </ul>	No comments noted to date	No comments noted to date	<ul style="list-style-type: none"> <li>9.1.2 Biophysical Environment - Birds, Wildlife and their Habitat</li> </ul>

**Note:** <sup>(1)</sup> "First Nation" concerns are from comments in the tracking tables in reference to Version A through F of the dAIR.

<sup>(2)</sup> "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; EIS = Environmental Impact Statement; SARA = *Species at Risk Act*; UWR = Ungulate Winter Range  
Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs

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The evaluation process also resulted in several candidate VCs not chosen as selected VCs. Further rationale for not selecting these candidates VCs is show in **Table 5.4.1-3**.

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.

To be effective and useful, indicators must have the 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 5.4.1-4**.

**Table 5.4.1-2: Evaluation of Candidate Valued Components**

Subject Area	Candidate VC	Attributes					Evaluation Key Questions				
		Relevant <sup>(1)</sup>	Comprehensive <sup>(2)</sup>	Representative <sup>(3)</sup>	Responsive <sup>(4)</sup>	Concise <sup>(5)</sup>	Measurable <sup>(6)</sup>	Grouping <sup>(7)</sup>	Ultimate Receptor <sup>(8)</sup>	Component of Concern <sup>(9)</sup>	Selected VC (Included or Excluded)
Terrestrial Environment	Surficial geology and soil cover	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 indicators such as soil availability and depth	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 – Surficial geology and soil cover is a selected VC Included
	Soil quality	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 reclamation suitability	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 – Soil quality is a selected VC Included
	Ecosystem composition	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 indicators such as ecosystem distribution, riparian old growth, sparsely vegetated ecosystems, and traditional use plants	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 – Ecosystem composition is a selected VC Included
	Plant species and ecosystems at risk	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Plant species and ecosystems at risk is a selected VC Included
	Amphibians	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Amphibians is a selected VC Included
	Water Birds	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Water birds is a selected VC Included

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Subject Area	Candidate VC	Attributes					Evaluation Key Questions				
		Relevant <sup>(1)</sup>	Comprehensive <sup>(2)</sup>	Representative <sup>(3)</sup>	Responsive <sup>(4)</sup>	Concise <sup>(5)</sup>	Measurable <sup>(6)</sup>	Grouping <sup>(7)</sup>	Ultimate Receptor <sup>(8)</sup>	Component of Concern <sup>(9)</sup>	Selected VC (Included or Excluded)
Terrestrial Environment (cont'd)	Forest and Grassland Birds	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Forest and Grassland Birds is a selected VC Included
	Moose	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Moose is a selected VC Included
	Caribou	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Caribou is a selected VC Included
	Grizzly Bear	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Grizzly Bear is a selected VC Included
	Furbearers	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Furbearers is a selected VC Included
	Bats	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Bats is a selected VC Included



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Subject Area	Candidate VC	Attributes					Evaluation Key Questions				
		Relevant <sup>(1)</sup>	Comprehensive <sup>(2)</sup>	Representative <sup>(3)</sup>	Responsive <sup>(4)</sup>	Concise <sup>(5)</sup>	Measurable <sup>(6)</sup>	Grouping <sup>(7)</sup>	Ultimate Receptor <sup>(8)</sup>	Component of Concern <sup>(9)</sup>	Selected VC (Included or Excluded)
Terrestrial Environment (cont'd)	Invertebrates	Y – Applicable to the Environmental Pillar	Y – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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 – Invertebrates is a selected VC Included
	SARA Listed Species	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – SARA Listed Species is not a selected VC Excluded
	Reptiles	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Reptiles is not a selected VC Excluded
	Woodpeckers	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Woodpeckers is not a selected VC Excluded
	Eagles	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Eagles is not a selected VC Excluded
	Sharp-tailed grouse	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Sharp-tailed grouse is not a selected VC Excluded

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Subject Area	Candidate VC	Attributes					Evaluation Key Questions				
		Relevant <sup>(1)</sup>	Comprehensive <sup>(2)</sup>	Representative <sup>(3)</sup>	Responsive <sup>(4)</sup>	Concise <sup>(5)</sup>	Measurable <sup>(6)</sup>	Grouping <sup>(7)</sup>	Ultimate Receptor <sup>(8)</sup>	Component of Concern <sup>(9)</sup>	Selected VC (Included or Excluded)
Terrestrial Environment (cont'd)	Deer	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Deer is not a selected VC Excluded
	Wolf	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Wolf is not a selected VC Excluded
	Mosquitoes and Bees	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Mosquitoes and Bees is not a selected VC Excluded
	Short-eared owl	Y – Applicable to the Environmental Pillar	N – VC needed to have full understanding of the Environmental Pillar and Terrestrial 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.	N – The potential effects of the candidate VC can 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	N – Short-eared owl is not a selected VC Excluded

**Note:** <sup>(1)</sup> 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.  
<sup>(2)</sup> Comprehensive, taken together, the VCs selected for an assessment should enable a full understanding of the important potential effects of the project.  
<sup>(3)</sup> Representative of the important features of the natural and human environment likely to be affected by the project.  
<sup>(4)</sup> Responsive to the potential effects of the project.  
<sup>(5)</sup> 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.  
<sup>(6)</sup> Measurable, the potential effects of the project on the VC can be measured and monitored.  
<sup>(7)</sup> Grouping, the potential effects of the candidate VC cannot be effectively represented by another VC.  
<sup>(8)</sup> Ultimate Receptor, the ultimate receptors are humans.  
<sup>(9)</sup> Component of Concern, includes issues and/or legislation raised by FNs, Federal or Provincial governments.  
N = No; VC = Valued Component; Y = Yes  
Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs

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**Table 5.4.1-3: Candidate Valued Components Not Selected**

Candidate Valued Component and Indicators	Rationale
SARA Listed Species	<ul style="list-style-type: none"> <li>• “SARA Listed Species” is not a standalone VC in this assessment. Potential effects on SARA-listed species will be covered through the assessment of potential effects on the Plant Species and Ecosystems at Risk VC, Amphibians VC, Water Birds VC, Forest and Grassland Birds VC, and Caribou VC</li> </ul>
Reptiles	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Woodpeckers	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Eagles	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Sharp-tailed Grouse	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Deer	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Wolf	<ul style="list-style-type: none"> <li>• Wolves are discussed in the EA in the context of a predator-prey relationship in the Moose VC and Caribou VC, for example</li> </ul>
Mosquitoes and Bees	<ul style="list-style-type: none"> <li>• Potential effects on wildlife and wildlife habitat will be covered through the assessment of potential effects on representative VCs. It is not practical to include all species present in the LSA as indicators of potential Project effects on wildlife</li> </ul>
Short-eared Owl	<p>The short-eared owl is not a chosen indicator for this assessment for the following reasons:</p> <ul style="list-style-type: none"> <li>• Baseline studies conducted between 2011 and 2013 identified one short-eared owl in the LSA and RSA and not in the Project footprint</li> <li>• Short-eared owl habitat is addressed in the Forest and Grassland VC</li> </ul>

**Note:** EA = Environmental Assessment; LSA = Local Study Area; RSA = Regional Study Area; SARA = *Species at Risk Act*; VC = Valued Component  
 Refer to **Table 4.3-2** Project Component and Activity Interaction Matrix for Selected VCs

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**Table 5.4.1-4: 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	Physiography and Topography	<ul style="list-style-type: none"> <li>Terrain stability</li> </ul>	This measurable parameter was chosen because it captures potential effects of the Project on physiography and topography.
	Surficial Geology and Soil Cover	<ul style="list-style-type: none"> <li>Soil availability and depth</li> </ul>	This measurable parameter was chosen because it captures potential effects of the Project on surficial geology and soil cover.
	Soil Quality	<ul style="list-style-type: none"> <li>Reclamation suitability</li> </ul>	This measurable parameter was chosen because it captures potential effects of the Project on soil quality.
	Ecosystem Composition	<ul style="list-style-type: none"> <li>Ecosystem distribution</li> <li>Riparian</li> <li>Old growth</li> <li>Sparsely vegetated ecosystems</li> <li>Traditional use plants</li> </ul>	The five indicators selected are based on ecosystems that have intrinsic ecological or social value, are representative of overall ecosystem condition, and are sensitive to the Project activities.
	Plant Species and Ecosystems at Risk	<ul style="list-style-type: none"> <li>SARA-listed whitebark pine</li> <li>Ecosystems at risk</li> </ul>	This measurable parameter was chosen because it captures potential effects of the Project on plant species and ecosystems at risk.
	Amphibians	<ul style="list-style-type: none"> <li>Western toad</li> <li>Western toad habitat</li> </ul>	Western toad was selected as a representative species and indicator because its broad use of wetlands and riparian areas conservatively represents aquatic and terrestrial amphibian habitat and it is a SARA-listed species. Although the model uses western toad because it is a SARA-listed species, the model is robust enough to cover the habitat and life requisites of other amphibians. Also, the wetlands and fisheries assessment programs further capture amphibian habitat.
	Water Birds	<ul style="list-style-type: none"> <li>Ring-necked duck</li> <li>Ring-necked duck habitat</li> <li>Yellow rail</li> <li>Yellow rail habitat</li> </ul>	Ring-necked duck was selected as an indicator because it is a representative waterfowl species for open pond and nesting habitats needed by waterfowl and shorebirds. Yellow rail was also selected because it is a SARA-listed species specializing in shallow marshes and has potential to be present at the edge of its current range in the Project area. The water bird assessment used a model that is robust enough to cover most waterfowl and shorebird habitats and life requisites. The assumptions of the ring-necked duck model apply to most ducks and shorebirds and the yellow rail is a SARA-listed species that Canadian Wildlife Service (CWS) required specific assessment for because of its specialist habitat requirements and its being at the edge of the potential distribution range in the Project area. Yellow rail is considered a conservative assessment (meaning that selection of yellow rail is a cautious approach to avoid underestimating the magnitude of effects).
	Forest and Grassland Birds	<ul style="list-style-type: none"> <li>Olive-sided flycatcher (songbird)</li> <li>Olive-sided flycatcher habitat</li> <li>Clark's nutcracker (songbird)</li> <li>Clark's nutcracker habitat</li> <li>Red-tailed hawk (raptor)</li> <li>Red-tailed hawk habitat</li> </ul>	Olive-sided flycatcher was selected as an indicator because it is a SARA-listed species that is representative of forest birds requiring old structure forest and adjacent openings. Clark's nutcracker was selected as an indicator because it is a habitat specialist associated with mature whitebark pine, which is a listed rare ecosystem. Red-tailed hawk was selected as an indicator because it is a wide ranging raptor species that represents old deciduous forests. By using a variety of forest birds ranging from habitat specialists such as Clark's nutcracker, which inhabits a listed ecosystem type (whitebark pine), to red-tailed hawk and the SARA-listed olive-sided flycatcher, the forest bird habitat suitability model and effects assessment are robust and selected to cover a variety of forest seral habitats, particularly older stands, which are less common in the regional study area. The model is inclusive of most forest bird species guilds and does include species such as grouse, other passerines, and raptors.
	Moose	<ul style="list-style-type: none"> <li>Moose</li> <li>Moose habitat</li> </ul>	Moose are an indicator of wetland and ecosystem health, and are important prey for many predatory carnivores (wolf, grizzly bear, black bear, wolverine, and cougar (Blood, 2000). Moose have also been identified as socially and economically important for traditional harvest and important for recreational harvest by resident and non-resident hunters (BC MFLNRO, 2013) as well as being ecologically important. Moose are found across the entire Project area, and because of their ecological and social importance, they were included as a representative ungulate VC.
	Caribou	<ul style="list-style-type: none"> <li>Caribou</li> <li>Caribou habitat</li> </ul>	Based on Aboriginal groups input, caribou is of great interest in the assessment and has been selected as a VC. The Proponent has designed the Project to avoid the caribou winter range in consultation with the Aboriginal groups and is participating in a Caribou Sub-working Group.
	Grizzly Bear	<ul style="list-style-type: none"> <li>Grizzly bear</li> <li>Grizzly bear habitat</li> </ul>	Grizzly bear, because of their need for large home ranges, are considered an indicator of forest ecosystem health and have also been identified because of their cultural, spiritual, and recreational importance as well as their ecological importance. They can be an indicator for the habitat requirements of many other forest species (e.g., lynx, wolverine). If management plans retain polygons with high value grizzly bear habitat, there is a greater chance of maintaining biodiversity across managed landscapes.
	Furbearers	<ul style="list-style-type: none"> <li>Marten</li> <li>Marten habitat</li> <li>Beaver</li> <li>Beaver habitat</li> </ul>	Marten was selected as an indicator species due to greater confidence for assessing the effects of the Project, and it is a representative species of furbearer distributed across the entire Project area. Marten are an indicator of forest ecosystem health, and are important prey for many predatory carnivores (e.g., wolverine, fisher, lynx, coyote, fox, and great-horned owl) (Buskirk and Rugiero, 1994) Marten have also been identified because of their cultural, recreational, and commercial harvesting importance as well as their ecological importance. They are an indicator for the habitat requirements of many other harvested furbearer species (e.g., lynx, fox, coyote, otter, mink, snowshoe hare, and weasel). Beaver has been added as a new indicator species. The assessment of effects on beaver is based on wetlands, which is the preferred habitat.
	Bats	<ul style="list-style-type: none"> <li>Little brown myotis</li> <li>Little brown myotis habitat</li> </ul>	Little brown myotis was selected as an indicator for bats, as it is a ubiquitous species through central British Columbia and has recently been listed as Endangered by COSEWIC. Bats are an indicator of forest ecosystem health, feeding in areas with insect populations and roosting in older more mature trees. Bats are a prey item for many raptors in the area. The little brown myotis is an indicator for the habitat requirements of many bats in the area. The conservation of little brown myotis will act to protect other bat species in the area.
Invertebrates	<ul style="list-style-type: none"> <li>Jutta arctic (butterfly)</li> <li>Jutta arctic habitat</li> <li>American emerald (dragonfly)</li> <li>American emerald habitat</li> </ul>	Two focal species of invertebrates were selected as indicators due to limited habitat availability and greater potential for impacts from the Project: the Blue-listed butterfly Jutta arctic, which requires black spruce bog wetlands as habitat, and the dragonfly American emerald, which requires open wetland and riparian habitats for breeding and aquatic life stages.	

**Note:** <sup>(1)</sup> 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 that 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