

13. ABORIGINAL INTERESTS (RIGHTS AND TITLE)

This chapter of the Application for an Environmental Assessment Certificate/Environmental Impact Statement for a Comprehensive Study (Application/EIS) assesses the potential adverse effects on asserted Aboriginal interests (herein referred to as rights and title) which may result from Project activities during the Construction, Operation, Decommissioning and Closure, and Post-Closure phases of the Ajax Project (the Project). Where asserted interests are identified, potential effects are assessed and proposed mitigations and efforts to reduce or avoid effects are provided.

The chapter also summarizes information KGHM Ajax Mining Inc. (KAM) obtained to date (either directly from Aboriginal Groups or other public sources) regarding asserted Aboriginal interests in the Project area. The chapter begins with an overview of the legal and historical framework in which Aboriginal interests exist. It then describes the methodology used for the assessment, and the asserted Aboriginal interests identified in relation to the Project. Where available, information on traditional knowledge/traditional land use (TK/TLU) as well as on resources that have been used in the past, that are currently being used, and that are anticipated to be used in the future are provided for each Aboriginal Group. A description of how this TK/TLU information was incorporated into the Application/EIS is also included.

Additional information with respect to Aboriginal Groups can be found in the following Application/EIS sections or chapters:

- Section 8.5, Current Use of Lands and Resources for Traditional Purposes;
- Chapter 12, Background and Aboriginal Groups Settings;
- Chapter 14, Other Potential Effects on Aboriginal Interests;
- Chapter 15, Procedural Aspects of Aboriginal Consultation; and
- Chapter 16, Summary.

13.1 OVERVIEW OF ABORIGINAL INTERESTS

Section 35 of the *Constitution Act* states: “The existing Aboriginal and treaty rights of the Aboriginal peoples of Canada are hereby recognized and affirmed.” Specific Aboriginal interests have been further defined, clarified, and described through the jurisprudence on a case-by-case basis.

To be an Aboriginal right an activity must be an element of a practice, custom or tradition integral to the distinctive culture of the Aboriginal Group claiming the right. To be integral, a practice, custom or tradition must be of central significance to the Aboriginal society in question -- one of the things which made the culture of the society distinctive. The practices, customs and traditions which constitute Aboriginal rights are those which have continuity with the practices, customs and traditions that existed prior to contact with European society. Examples of Aboriginal rights that have been established in particular cases include the right to fish, hunt, and trap on traditional lands, including the right to subsist on these resources, and may include cultural practices.

Aboriginal title encompasses the right to exclusive use and occupation of the land held pursuant to that title for a variety of purposes, which need not be aspects of those Aboriginal practices, customs and traditions which are integral to distinctive Aboriginal cultures. However, protected uses must not be irreconcilable with the nature of the group's attachment to that land – that is, it is group title and cannot be alienated in a way that deprives future generations of the control and benefit of the land.

Once established, Aboriginal title gives a unique and beneficial interest in the land that cannot be equated to other forms of property ownership. Aboriginal title confers ownership rights similar to fee simple rights, including the right of enjoyment and occupancy of the land and the right to:

- decide how the land will be used;
- possess the land;
- reap the economic benefits of the land; and
- pro-actively use and manage the land.

Restrictions on Aboriginal title include that the use to which the land is put cannot be irreconcilable with the nature of the prior occupation or relationship with the land, it cannot be alienated except to the Crown, and it cannot be encumbered in a way that would prevent future generations of the group from using and enjoying it.

Pending the determination of Aboriginal rights or title, the Crown has a duty to consult Aboriginal peoples. The duty arises when the Crown has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it. The Crown may delegate procedural aspects of consultation to industry proponents seeking a particular development (e.g., KAM). However, the ultimate legal responsibility for consultation and accommodation rests with the Crown.

Pursuant to the environmental assessment process, KAM was assigned certain responsibilities to undertake procedural aspects of Aboriginal consultation in support of the Crown's duty to consult including sharing information about the Project and its associated Crown approvals, collecting and considering information about Aboriginal rights (including title) in the area, and engaging Aboriginal Groups to understand how the Project and associated Crown approvals may impact their Aboriginal rights (including title).

13.2 SCOPE OF THE ASSESSMENT

13.2.1 Regulatory and Policy Setting

The BC EAO section 11 Order (issued on January 11, 2012) and the section 13 Order (issued July 23, 2015) for the Project identified the following Aboriginal Groups with asserted interests that could potentially be affected by the Project:

- Tk'emlúps te Secwépemc (TteS) and Skeetchestn Indian Band (SIB), jointly known as the Stk'emlupsemc te Secwépemc Nation (SSN);

- Lower Nicola Indian Band (LNIB), located in nearby Merritt and a part of the Nlaka'pamux Nation;
- Ashcroft Indian Band (AIB), located close to the Town of Ashcroft and part of the Nlaka'pamux Nation; and
- The Whispering Pines/Clinton Indian Band (WP/CIB), part of the Secwépemc Nation and located near Clinton, BC on Highway 97 and near Kamloops, BC.

KAM also continues to engage Métis Nation BC (MNBC), as directed by the CEA Agency.

The Project lies within the Secwépemc traditional territory (see Figure 12.1-1 in Chapter 12 for more details). The Project also lies in the Nlaka'pamux Nation (LNIB and AIB) traditional territory (see Figure 12.1-2 in Chapter 12 for more details).

13.2.2 Assessment Methodology

The potential effects of the Project on Aboriginal interests (i.e., practices, traditions, and customs) are assessed through an adaptation of the assessment methodology described in Section 5.1 (Project Assessment Methodology). The potential adverse effects of the Project on Aboriginal interests are assessed in three main steps as described below.

The first step involves determining the scope of the assessment. This includes identifying the Aboriginal interests asserted in the Project area by the Aboriginal Groups and the Valued Components (VCs) that are related to those Aboriginal interests.

The second step involves describing the potential adverse effects of the Project on the identified Aboriginal interests and the relevant mitigation measures to avoid, mitigate or otherwise accommodate those potential adverse effects. For mitigation measures described elsewhere in the Application/EIS, only a summary is provided, and the appropriate section is cross-referenced. As required, the assessment also identifies additional measures to avoid, mitigate, or accommodate potential adverse effects on Aboriginal interests that are additional to the measures outlined in the VCs in Part B of the Application/EIS.

The third and final step involves characterizing the residual adverse effects on Aboriginal interests using criteria outlined in Chapter 5, Assessment Methodology and defined in Table 13.2-1. This step also includes a discussion of the seriousness of the residual effects.

The following criteria are used:

- **Magnitude:** refers to the expected severity or size of the residual effect on the practice of Aboriginal interests.
- **Duration:** refers to the length of time the Aboriginal interest may be affected.
- **Frequency:** refers to how often the residual effect on the practice of the Aboriginal interest is expected to occur.
- **Geographic extent:** refers to the spatial scale over which the residual effects are expected to occur with respect to the traditional territory.

Table 13.2-1. Definition of Characterization Criteria for Residual Effects on Aboriginal Interests

Magnitude	Duration	Frequency	Geographic Extent	Reversibility	Context
<i>How severe will the effect be?</i>	<i>How long will the effect last?</i>	<i>How often will the effect occur?</i>	<i>How far will the effect reach?</i>	<i>To what degree is the effect reversible?</i>	<i>What is the current condition of the ecosystem and how commonly is it represented in the traditional territory?</i>
<p>Negligible: No or very little detectable change on the practice of Aboriginal interests.</p> <p>Minor: Detectable changes from baseline conditions and the ability to practice Aboriginal interests.</p> <p>Medium: Differs substantially from baseline conditions and the ability to practice the practice Aboriginal interests is notably impeded.</p> <p>Major: Detectable changes from baseline conditions and the ability to practice Aboriginal interests is severely or totally impeded.</p>	<p>Short-term: Effect lasts from year -2 to 1 (Construction phase).</p> <p>Medium-term: Effect extends through year 23 (Operation phase).</p> <p>Long-term: Effect extends through year 29 (Decommissioning and Closure phase).</p> <p>Far Future: Effect extends beyond year 29 (Post-Closure phase).</p>	<p>Once: Effect occurs once during the life of the Project.</p> <p>Sporadic: Effect occurs at sporadic or intermittent intervals (i.e., once every few months) during the life of the Project.</p> <p>Regular: Effect occurs on a regular basis (i.e., every week, every month) during the life of the Project.</p> <p>Continuous: Effect occurs constantly during the majority of the life of the Project.</p>	<p>Site-specific: Effect occurs within specific sites in the traditional territory.</p> <p>Local: Effect is limited to the Project footprint and immediate vicinity or one watershed.</p> <p>Regional: Effect extends across a broader region (e.g., multiple watersheds).</p> <p>Beyond Regional: Effect extends across the traditional territory.</p>	<p>Reversible Short-term: Effect can be reversed relatively quickly (within 2 years).</p> <p>Reversible Long-term: Effect can be reversed within 20 years of Post-Closure.</p> <p>Irreversible: Effect is permanent, and cannot be reversed.</p>	<p>Low: The Aboriginal interest has high resiliency to imposed change and can respond and adapt to the effect (i.e., there are other similar resources or areas available within the traditional territory where the Aboriginal interest could be practiced).</p> <p>Neutral: Not applicable</p> <p>High: The Aboriginal interest has low resiliency to imposed change and will not easily adapt to the effect (i.e., there are limited resources or areas within the traditional territory where the Aboriginal interest could be practiced, the area affected is of high importance to the Aboriginal Group).</p>

- **Reversibility:** evaluates whether the impacts on Aboriginal interests can be reversed once the disturbance ceases.
- **Context:** refers to the ability of the Aboriginal interest to accept change. This reflects the level of importance of the practice, resource or site to the Aboriginal Group and whether there are other similar resources, locations or sites available in the larger traditional territory where the Aboriginal interest could also be practiced.

The level of seriousness of effects is defined as follows:

- **Negligible:** The Project will have no measurable interference with activities or resources that are linked to the practice of Aboriginal interests. The Aboriginal interests can continue to be meaningfully practiced in the traditional territory with slight modifications.
- **Minor:** The Project will have a low but detectable interference with activities or resources that are linked to the practice of Aboriginal interests. The Aboriginal interests can continue to be meaningfully practiced in the traditional territory with several modifications.
- **Moderate:** The Project will result in a noticeable interference with activities or resources that are linked to the practice of Aboriginal interests. The Aboriginal interests can continue to be practiced in the traditional territory with substantial modifications.
- **High:** The Project will result in a severe interference with activities or resources that are linked to the practice of Aboriginal interests. The Aboriginal interests can continue to be practiced in the traditional territory only with major modifications.

13.2.3 Scope of the Assessment

This analysis draws on results from VCs in Part B of the Application/EIS to infer conclusions about effects on the practices of Aboriginal interests (e.g., fish populations, mammals). Both direct and indirect effects of the Project are considered for relevant VCs as well as the applicable mitigation measures to avoid, minimize or otherwise accommodate potential adverse effects on those VCs. In particular, the characterization and conclusions of residual effects and cumulative effects of the Project on relevant VCs are considered when assessing the seriousness of the potential effects on Aboriginal interests.

The VCs in the Application/EIS that are expected to interact with Aboriginal interests include, but are not limited to:

- surface water quality and quantity (Sections 6.3 and 6.4);
- fish populations and fish habitat (Section 6.7);
- vegetation VCs such as rare plants (Section 6.8);
- wildlife VCs including non-migratory gamebirds (Section 6.16) and mammals (Section 6.17);
- social VCs including land and resource use (Section 8.4) and current use of lands and resources for traditional purposes (CULRTP; Section 8.5);
- archaeological sites and heritage sites (Sections 9.1 and 9.2); and

- health VCs including air quality (Section 10.1), country foods (Section 10.3), human health (Section 10.4), noise and vibration (Section 10.5), and community health and well-being (Section 10.7).

As part of the Application/EIS, KAM completed an assessment of potential effects on CULRTP (Section 8.5), which informs the discussion presented in this section pertaining to effects on activities linked to Aboriginal interests such as fishing, hunting, plant gathering, and ceremonial practices. The assessment in Section 8.5 is relevant for the assessment of Aboriginal rights because, it draws on results from other VCs, it identifies negative interactions between the Project and current land and resources used for traditional purposes (fish, wildlife, plants, and ceremonial sites), which are linked to the practice of Aboriginal interests. It also identifies changes in the ability to access preferred harvesting locations, changes to the quality of the resource (i.e., potential contamination), changes in the availability of the resources/sites and changes to the experience of land and resource use (i.e., sensory disturbances). Cross-references to the CULRTP VC and other relevant VCs will be provided throughout the assessment to avoid redundancy. Table 13.2-2 summarizes the findings from key VCs in the Application. It summarizes the potential effects, proposed mitigation, residual effects and cumulatives effects for each relevant VC.

As directed by CEA Agency both direct and indirect effects on Aboriginal interests are considered in this assessment. Indirect effects on Aboriginal interests could result from any change that the Project may cause in the environment (e.g., land, water, air, wildlife species and habitats), which could indirectly affect the practice of Aboriginal interests.

Detailed background information on the historic and current land and resource use for each Aboriginal Group is presented in Chapter 12 and is summarized in this section. The assessment of other Aboriginal interests, including potential indirect effects on economic, social, health conditions, as well as physical and cultural heritage is presented in Chapter 14. Detailed consultation activities for each Aboriginal Group is presented in Chapter 15 (Procedural Aspects of Aboriginal Consultation).

In addition to effects on the Aboriginal right (fishing, hunting, trapping, plant gathering and ceremonial practices), this section also considers the potential for the Project to affect asserted title. For the SSN, additional discussion on title is included focusing on occupancy, governance, and economic benefit from lands.

13.2.4 Assessment Boundaries

13.2.4.1 Temporal Boundaries

The assessment considers the past, present and future practice of Aboriginal interests. However, the Project phases are temporal boundaries used to inform the assessment of the duration of the effects on Aboriginal interests. These phases reflect periods during which planned Project activities are expected to occur and, therefore, could interact with the Aboriginal interests.

Table 13.2-2. Summary of Findings from Key Valued Components

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
Surface water quality	Section 6.3	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake)	<p>Effects on increase soil erosion and sediments to Jacko Lake and Peterson Creek from clearing, grubbing and earthworks activities, and reclamation activities.</p> <p>Effects from development of open pit contributing to dust in the atmosphere.</p> <p>Effects from contact water: metal leaching and seepage into Jacko Lake and Peterson Creek from project facilities (i.e., TSF and EMRSF).</p> <p>Effects on Humphrey Creek due to seepage from the SMRSF and runoff from the reclaimed SMRSF and reclaimed TSF.</p>	<p>Water quality mitigation as described in the Water Management and Hydrometric Monitoring Plan (Section 11.7) includes:</p> <p>Design mitigation measures for the Peterson Creek Diversion to direct excess water into the Peterson Creek Downstream Pond, and away from influences from mining activities;</p> <p>Design mitigation measures for the mine rock storage facility (MRSF) to divert and collect runoff and seepage water into collection ponds; and</p> <p>Design mitigation measures for the tailings storage facility to divert and collect runoff and seepage water into collection ponds.</p>	<p>No residual effects identified for Jacko Lake since no parameters are predicted to exceed the water quality guidelines, water quality benchmarks, or science based environmental benchmark in the Base Case or in any of the sensitivity case models.</p> <p>Residual effects for Peterson Creek include contact water (metal leaching and seepage). Rated as Not Significant (minor) for PC02.3 and Not Significant (moderate) for PC02.</p> <p>Residual effects for Humphrey Creek include contact water (metal leaching and seepage). Rated as Not Significant (moderate).</p>	
Surface water quantity	Section 6.4	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake)	<p>Effects on streamflows in Jacko Lake from reduction of surface runoff and baseflows due to construction of the WMRSP and Pond 1.</p> <p>Effects on streamflows in Peterson Creek (Lower) from reduction of surface runoff and baseflows. Water table within pit excavation will be lowered as a result of dewatering throughout mining. Surface runoff from reclaimed MRSF's will be captured in evaporation ponds.</p> <p>Effects on peak flows in Peterson Creek (Lower). Inflows to Jacko Lake will be managed by pumping around the Open Pit and Central Pond; however, these pumped flows will be unable to simulate existing lake spillway flows given constraints on pumping capacity.</p> <p>Effects on Kamloops Lake acting as a source of make-up water, including the filling of the TSF pond for start-up.</p>	<p>The Project has been designed to minimize adverse effects to surface water quantity and quality through the development and implementation of a Water Management and Hydrometric Monitoring Plan (WMP) (Section 11.7). The WMP for Jacko Lake and Peterson Creek (Lower) includes:</p> <ul style="list-style-type: none"> • Construction of four new dams on Jacko Lake; • Removal of the existing dam and low-level outlet on Jacko Lake; • Construction of the Peterson Creek Diversion System (PCDS), which will allow for inflows into Jacko Lake to be pumped around the mine site and re-introduced to Peterson Creek (Lower) immediately downstream of the Central Pond; • Temporary abandonment of the Peterson Creek (Lower) channel between the outlet of Jacko Lake and the eastern extent of the Open Pit for Operation (this channel would be re-established during Closure and Decommissioning); • Construction of a new pond, the Central Pond, within Peterson Creek (Lower) adjacent to the Open Pit; and • Construction of a new pond, the Peterson Creek Downstream Pond (PCDP), within Peterson Creek (Lower) downstream of the confluence with Humphrey Creek. 	<p>No residual effects identified for Jacko Lake since inflows to Jacko Lake are considered non-contact water and these flows will be managed by the Peterson Creek Diversion.</p> <p>Residual effects for Peterson Creek (Lower) include potential decrease in annual flow volume and low flow. Rated as Not Significant (moderate).</p> <p>Residual effects on Peterson Creek (Lower) also include potential flattening of monthly flow distribution and decrease in peak flows. Rated as Not Significant (minor).</p> <p>Residual effects on Kamloops Lake include flattening of monthly flow distribution, decrease in peak flows, decrease in annual flow, volume, and decrease in low flow. Rated as Not Significant (minor).</p>	<p>Cumulative effects on Kamloops Lake potentially resulting from interaction with the New Afton mine use of Kamloops Lake as a source of make-up water. Rated as Not Significant (minor).</p>
Fish and fish habitat	Section 6.7	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake)	<p>Effects on direct loss of fish and fish habitat due to project activities during Construction and/or Operation, including Peterson Creek bridge construction, use, and maintenance, loading, hauling, and deposition of mine rock, TSF development, development of MRSF (operation), pipeline utility corridor (potable water, sewage, and site water),</p>	<p>Mitigation measures to avoid, minimize, and/or control potential adverse effects of the Project on Fish and Fish Habitat include: design changes; implementation of Best Achievable Control Technology or management practices; and providing restoration or offsetting.</p> <p>In addition to the Fisheries and Aquatic Life Monitoring Plan, Section , the following management and monitoring plans will also contain measures that will protect fish and fish habitat during the normal course of Construction and Operation:</p> <ul style="list-style-type: none"> • Surface Water Quality Management and Monitoring Plan, 	<p>Residual effects for direct loss of habitat in northeast arm of Jacko Lake from open pit development affecting the productivity of the fish population. Rated as Not Significant (minor).</p> <p>Residual effects for direct loss of habitat in Peterson Creek from open pit development affecting the productivity of the fish population. Rated as Not Significant</p>	<p>Cumulative effects on fish populations (sub-lethal effects) from altered primary productivity Project footprint and contact water reducing stream flow, and interactions with other activities such as agriculture that causes nutrient runoff into receiving watercourses. Rated as Not Significant (minor).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			<p>water intake from Kamloops Lake, open pit development.</p> <p>Effects of changes in hydraulic conditions (water velocity, water depth, wetted width) associated with changes in surface water on fish and fish habitat in Peterson Creek downstream of the Project footprint and Kamloops Lake downstream of the Project area as a result of use of the water intake from Kamloops Lake.</p> <p>Effects on increased mortality in Peterson Creek and Jacko Lake due to increased fishing pressure, project activities such as blasting, instream works, entrainment or impingement on the freshwater intake in Kamloops Lake or the Peterson Creek Diversion intake in Jacko Lake, and fish stranding and isolation.</p> <p>Sub-lethal effects on Jacko Lake and Peterson Creek such as altered water chemistry, altered sediment quality, altered primary productivity, and behavioural changes resulting from increased noise and artificial light.</p>	<p>Section 11.23;</p> <ul style="list-style-type: none"> • Groundwater Quality Management and Monitoring Plan, Section 11.24; • Erosion and Sedimentation Control Plan, Section 11.2; • Metal Leaching and Acid Rock Drainage Management and Monitoring Plan, Section 11.5; Air Quality and Dust Control Management Plan, Section 11.6; • Water Management and Hydrometric Monitoring Plan, Section 11.7; • Explosives Management Plan, Section 11.11; • Soil Salvage and Handling Plan, Section 11.3; • Dark Sky Management and Monitoring Plan, Section 11.19; and • Noise and Vibration Management Plan, Section 11.22. <p>Specific measures to mitigate direct and indirect habitat losses are summarized as follows:</p> <p><u>Habitat Loss – Direct</u></p> <p>Development of the Project would result in the permanent loss of fish habitat and associated productive capacity; therefore, offsetting options are required. Offsetting is required when residual serious harm to fish remains after avoidance and implementation of mitigation measures. The offsetting measures to address potential serious harm to fish in Jacko Lake and Peterson Creek will be implemented, as described in the Ajax Project Conceptual Offsetting Plan (Appendix 6.7-D).</p> <p><u>Habitat Loss – Indirect</u></p> <p>The Fisheries and Aquatic Life Monitoring Plan and the Surface Water Quality Management and Monitoring Plan will be implemented to assess predicted flow changes against actual flow changes. Flow and hydraulic characteristics at the established transect sites will be monitored during the Project Construction, Operation, Decommissioning and Closure and Post-Closure phases to assess whether the predicted changes in flow meet the recommended flow threshold for BC streams. Should monthly values be measurably different than predicted values, additional mitigation measures will be considered, which could include working with the provincial government to manage releases from the Peterson Creek Downstream Pond to meet instream flow needs.</p>	<p>(minor).</p> <p>Residual effects for indirect habitat loss in Peterson Creek downstream of the Project area associated with flow reductions from Project footprint and contact water. Rated as Not Significant (moderate).</p> <p>Residual effects for fish mortality in Jacko Lake associated with changes in pressure from blasting. Rated as Not Significant (minor).</p> <p>Residual effects for fish mortality in Jacko Lake associated with changes in pressure from installation of the sheet pile dam for open pit development. Rated as Not Significant (minor).</p> <p>Residual effects for sub-lethal effects on fish populations in Peterson Creek downstream of the Project area associated with change in water temperature and primary productivity from reduced flows resulting from Project Footprint and contact water. Rated as Not Significant (minor).</p>	
Rare plants	Section 6.8	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	<p>Effects on habitat alteration resulting from fugitive dust, introduction of invasive species, and contamination of rare and traditional plants.</p> <p>Effects on habitat loss, loss of known rare plant occurrences, and loss of rare plant macrohabitat resulting from clearing and/or grubbing, earthworks and water management dams.</p>	<p>Impact avoidance and reduction mitigation proposed for the Project are described in detail in the Wildlife and Vegetation Monitoring Plan (Section 11.27), and include:</p> <ul style="list-style-type: none"> • Known rare plant occurrences will be used as inputs during the final design and Construction phase. Where feasible, Project IF will be placed so as to avoid direct impacts to these occurrences; • East WMP Dam will be altered to avoid Stegionia moss occurrence; • Maps and a spatial database of known rare plant locations in the 	<p>No residual effects for habitat alteration since implementation of management and monitoring plans associated with fugitive dust, invasive species, and hydrological changes is anticipated to mitigate for the adverse effects.</p> <p>Residual effects for loss of known rare plant occurrences, loss of rare plant macrohabitat due to clearing and/or</p>	<p>Cumulative effects on loss of rare plant habitat, and of rare plant occurrences, resulting from clearing/grubbing and earthworks and interaction with projects/activities in the region (i.e., Kamloops Forest District, Agriculture, city expansion, Kinder Morgan Pipeline). Data deficient with poor understanding of the potential impacts</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				<p>vicinity of Project facilities should be maintained and consulted to avoid impacts during Operation and maintenance activities. Ongoing monitoring by QEP or Project environmental manager will occur. The database should be actively updated as new information becomes available;</p> <ul style="list-style-type: none"> • Exclusion areas will be created at all known rare plant occurrences located adjacent to construction and operation areas. These areas will be clearly flagged to discourage accidental encroachment with machines. Signage will be added where necessary to indicate the boundaries of the exclusion area; • Construction personnel will attend a field-based orientation session where the exclusion areas will be explained, and avoidance of these areas will be mandatory; • Roads and transmission lines will be designed to minimize the number of water crossings and to avoid running parallel to watercourses. They will also be designed to minimize the removal of known rare plant occurrences; and • Erosion prevention and bank stabilization techniques will be used (Section 11.2). 	grubbing, and earthworks. Rated as Not Significant (moderate).	of other projects and activities on rare plants.
Rare and sensitive ecological communities	Section 6.9	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	<p>Effects on habitat alteration resulting from fugitive dust, introduction of invasive species, and contamination of wetlands. Effects from chemical hazards resulting from waste transport, concentrate transport, and sewage infrastructure, as well as site road use. Contact water (metal leaching and seepage) may also result in chemical hazards.</p> <p>Effects on habitat loss resulting from clearing and/or grubbing, earthworks and water management dams.</p>	<p><u>Habitat Loss</u></p> <p>During Project planning, specific mine footprints were redesigned to ensure the minimum possible impact on the surrounding environment would occur.</p> <p>During Construction, Project footprints will be kept to the minimum size required. At the end of mine life, during Decommissioning and Closure, habitat will be restored through reclamation and revegetation processes.</p> <p>Impact avoidance and reduction mitigation proposed for the Project are described in detail in the Wildlife/Vegetation Management Plan (Wildlife/Vegetation Monitoring Plan Section 11.27) With the application of the above mitigation measures, residual effects will remain due to direct habitat loss. To further reduce residual effects, KAM will implement further mitigation in the form of a compensation program. The objective of the compensation program will be to achieve like-for-like offsetting of wetland function loss. Compensation efforts will initially focus on local wetlands, including enhancement around the verges of Jacko Lake, and creation of wetland habitat in combination with fish habitat offsetting at Inks Lake. Further details of this plan are discussed in Appendix 11.21-A.</p> <p><u>Habitat Alteration</u></p> <ul style="list-style-type: none"> • Mitigation measures to address habitat alteration include: • Fugitive dust mitigation measures as included in the Air Quality and Dust Control Plan (Section 11.6); • Invasive species mitigation measures as included in the Invasive Species Management Plan (Section 11.17); 	<p>No residual effects for habitat alteration since implementation of management and monitoring plans associated with fugitive dust, invasive species, and hydrological changes are anticipated to mitigate for the adverse effects.</p> <p>No residual effects for chemical hazards since no dissolved metals modelled in Jacko Lake, Peterson Creek, and Humphreys Creek are expected to reach levels sufficient to cause toxicity effects to wetland associated plant species.</p> <p>Residual effects for habitat loss resulting from clearing and/or grubbing, earthworks and water management dams. Rated as Not Significant (moderate).</p>	<p>Cumulative effects on habitat loss, including loss of listed communities, wetlands, old growth forest, and rock outcrops, resulting from interaction with projects/activities in the region (i.e., Kamloops Forest District, Agriculture, city expansion, Kinder Morgan Pipeline). Rated as Not Significant (minor).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				<ul style="list-style-type: none"> Water Management and hydrometric monitoring to mitigate hydrological changes as included in the Water Management and Hydrometric Monitoring Plan (Section 11.7); and Chemical hazards resulting in water quality effects will be mitigated with measures presented in the Surface Water Quality Management and Monitoring Plan (Section 11.23), and the Groundwater Quality Management and Monitoring Plan (Section 11.24). 		
Grasslands	Section 6.10	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	Effects on habitat alteration resulting from fugitive dust, introduction of invasive species, and contamination of grasslands. Effects on habitat loss resulting from clearing and/or grubbing, earthworks and water management dams.	<p><u>Habitat Loss</u></p> <p>During construction Project footprints will be kept to the minimum size required. In the short and medium-term, loss of grassland habitat can be partially compensated through enhancement of grasslands present in the LSA and RSA. KAM will partner with the City of Kamloops, the Grasslands Conservation Council of BC, local landowners, tenure holders, and Aboriginal Groups to improve the function of grasslands.</p> <p>Over the long-term, 1,125 ha of grassland habitat will be restored through reclamation and revegetation processes (Landscape Restoration Plan Section 11.26). Grassland habitats will be recreated to approximate the range of natural variation (i.e., slope, aspect) and species composition (bluebunch wheatgrass, rough fescue). Reclamation and revegetation will occur progressively throughout Operation, Closure, and Post-Closure.</p> <p><u>Habitat Alteration</u></p> <p>Mitigation measures to address habitat alteration include:</p> <ul style="list-style-type: none"> Fugitive dust mitigation measures as included in the Air Quality and Dust Control Plan (Section 11.6); and Invasive species mitigation measures as included in the Invasive Species Management Plan (Section 11.17). 	No residual effects for habitat alteration since grasslands are already considered moderately altered. Residual effects for habitat loss resulting from clearing and/or grubbing, earthworks and water management dams. Rated as Not Significant (moderate).	Cumulative effects on habitat loss, loss of grasslands resulting from interaction with projects/activities in the region (i.e., Kamloops Forest District, Agriculture, city expansion, Kinder Morgan Pipeline). Rated as Not Significant (minor).
Migratory birds	Section 6.14	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	Effects on habitat loss resulting from clearing and/or grubbing and earthworks. Effects on habitat alteration resulting of result of fugitive dust deposition, soil compaction, and invasive species introduction. Effects on sensory disturbance resulting from loud construction-related project activities. Noise sensory disturbance include drilling and blasting, public and site road realignment/construction, use and maintenance, crushing waste rock, and loading, hauling and deposition of waste rock. Light disturbance include Project lighting, which will take place in the Construction and Operation phases. Effects on disruption of movement	<p><u>Habitat Loss</u></p> <p>During Project planning, specific mine footprints were redesigned to ensure the minimum possible impact on the surrounding environment would occur. During Construction Project footprints will be kept to the minimum size required. Over the long-term, habitat may be restored through reclamation and revegetation processes, though this will not occur until the Decommissioning and Closure phase. Impact avoidance and reduction mitigation proposed for the Project will include:</p> <ul style="list-style-type: none"> Shrub/grassland habitat may be created on waste rock or stockpile areas that will provide feeding and nesting habitat for Long-billed Curlew and Common Nighthawk; Reclamation and revegetation of areas during Operation, Decommissioning and Closure, and Post-Closure will include native plant seeds in the seed mix; Key areas for grassland dependent species will be identified and fenced off to avoid disturbance (particularly livestock grazing) 	No residual effects for habitat alteration, disruption of movement, direct/indirect mortality, wildlife attractants, and sensory disturbance due to negligible to low impact on migratory birds. Residual effects for habitat loss include reduction in the amount of available habitat resulting from clearing and/or grubbing. Rated as Not Significant (moderate). Residual effects for chemical hazards on waterfowl, Sandhill cranes, and great-blue herons include exposure to selenium, molybdenum and other elements resulting from contact water. Rated as Not Significant (minor).	Cumulative effects on habitat loss resulting from clearing/grubbing and earthworks and interactions with construction of other project infrastructure (i.e., Kamloops Forest District, Agriculture, city expansion, Kinder Morgan Pipeline). Rated as Not Significant (minor). Cumulative effects on chemical hazards resulting from contact water and interactions with the TSF at the New Afton mine, leading to multiple sources of chemical hazards within the RSA. Rated as Not Significant (minor).

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			<p>affecting wildlife movement due to Project related activities, such as excavation of the mine (movement barrier) or road construction (corridors).</p> <p>Effects on direct mortality due to vehicle/machinery use on roads, individuals getting killed while their habitat they are in is being removed, and individuals having an unexpected interaction with an anthropogenic feature.</p> <p>Effects on indirect mortality due to increased access for hunting or poaching, from range shifts leading to increased resource competition between individuals, or from increased hunting pressure by natural predators.</p> <p>Effects on wildlife attractants due to increase odours, food waste, sewage, garbage, and stored chemicals from construction crews and camps.</p> <p>Effects on chemical hazards due to wildlife ingesting, inhaling, or absorbing chemicals from improperly stored substances, dust on soil or vegetation, or bioaccumulation from prey. Contact water (metal leaching and seepage) may also negatively migratory birds.</p>	<p>during sensitive times (April 1 to July 31). Areas will be identified on traditional and KAM owned lands;</p> <ul style="list-style-type: none"> • Wetland reclamation will re-create 12 ha of lost wetland/water features (Section 11.20). These features will be revegetated to support nesting and foraging of Waterfowl, Great Blue Heron and Sandhill Crane; • Fish habitat offsetting will also create suitable habitat for waterfowl and shorebirds. The shoreline should be revegetated to provide nesting habitat. Nest boxes and other habitat features will also be considered; • Specific measures to prevent additional loss or degradation of wetlands will be taken during Project Construction and operation following the Standards and Best Practices for Instream Works (BC Ministry of Water, Land and Air Protection 2004) and the Land Development Guidelines for the Protection of Aquatic Habitat (Chilibeck et al. 1992); • A habitat compensation plan will be initiated during project Construction with the aim to conserve and enhance wetland and grassland function within the RSA. This plan will target traditional and KGHM owned lands. Details of this plan will be discussed in the Wildlife/Vegetation Monitoring Plan Section 11.21.; • Nest boxes for cavity nesting waterfowl will be incorporated in the wetlands mitigation plan. Additional nest boxes will be placed in suitable habitat present on KAM owned lands. Cattle should be excluded from enhancement areas to enhance their use by migratory birds and other at-risk species; and • KAM will collaborate with government, landowners, forest industry, farmers and First Nations to mitigate additional threats to migratory bird habitat. Awareness and education programs for Common Nighthawk, Long-billed Curlew and Olive-sided Flycatcher will help maintain existing population of these species. <p><u>Habitat Alteration</u></p> <p>Mitigation measures to address habitat alteration include:</p> <ul style="list-style-type: none"> • Fugitive dust mitigation measures as included in the Air Quality and Dust Control Plan (Section 11.6); and • Invasive species mitigation measures as included in the Invasive Species Management Plan (Section 11.17). • Some other general measures for migratory birds include: • Reduce pesticide use, or use of environmentally benign pesticides at a small scale; and • Restore / enhance remaining habitat for migratory birds, including the creation of habitat features. 		

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
Non-migratory gamebirds	Section 6.16	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	<p>Effects on habitat loss resulting from clearing and/or grubbing and earthworks.</p> <p>Effects on habitat alteration resulting of result of fugitive dust deposition, soil compaction, and invasive species introduction.</p> <p>Effects on sensory disturbance resulting from loud construction-related project activities. Noise sensory disturbance include drilling and blasting, public and site road realignment/construction, use and maintenance, crushing waste rock, and loading, hauling and deposition of waste rock. Light disturbance include Project lighting, which will take place in the Construction and Operation phases.</p> <p>Effects on disruption of movement affecting wildlife movement due to Project related activities, such as excavation of the mine (movement barrier) or road construction (corridors).</p> <p>Effects on direct mortality due to vehicle/machinery use on roads, individuals getting killed while their habitat they are in is being removed, and individuals having an unexpected interaction with an anthropogenic feature.</p> <p>Effects on indirect mortality due to increased access for hunting or poaching, from range shifts leading to increased resource competition between individuals, or from increased hunting pressure by natural predators.</p> <p>Effects on wildlife attractants due to increase odours, food waste, sewage, garbage, and stored chemicals from construction crews and camps.</p> <p>Effects on chemical hazards due to wildlife ingesting, inhaling, or absorbing chemicals from improperly stored substances, dust on soil or vegetation, or bioaccumulation from prey. Contact water (metal leaching and seepage) may also negatively affect grouse.</p>	<p><u>Habitat Loss</u></p> <p>During Project planning, specific mine footprints were redesigned to ensure the minimum possible impact on the surrounding environment would occur. During Construction, Project infrastructure footprints will be kept to the minimum size required. At the end of mine life, during Decommissioning and Closure, habitat will be restored through reclamation and revegetation processes. Reclamation of the Project site has the potential to regain some habitat lost, if the appropriate seeds are included in the revegetation seed mix. Shrub/grassland habitat will be created on Mine Rock Storage Facilities to provide feeding and security requisites, while existing riparian zones along Peterson Creek and other nearby areas will be enhanced to provide suitable winter habitat. Reclaimed aspen groves may also provide feeding and security habitat for both species of grouse, once an appropriate structural stage is reached. Site road decommissioning and reclamation, mine rock management facilities reclamation, tailing storage facility decommissioning and reclamation, and the dismantling of ancillary buildings will increase the amount of available habitat in the LSA.</p> <p><u>Habitat Alteration</u></p> <p>Dust and invasive plant species are expected to have a low magnitude impact on grouse. The Air Quality Monitoring and Dust Control Plan (Section 11.6) in combination with the Transportation Management Plan (Section 11.20) will reduce the impact of dust even further. The Soil Salvage and Handling Plan and the Landscape Design and Restoration Plan (Sections 11.3 and 11.26, respectively) as well as the Invasive Species Management Plan (Section 11.17) and a vehicle wash station at site entrance may also help to reduce the impact of invasive plants.</p> <p><u>Sensory Disturbance</u></p> <p>Noise is anticipated to have a negative effect on grouse, specifically Sharp-tailed Grouse and the continued use of leks. Noise may come from roads or Project specific activities, such as drilling and blasting. The Noise and Vibration Management Plan (Section 11.22) will be developed with the objective to ensure that noise levels during all phases of the Project are acceptably low for human and wildlife receptors, as per human health guidelines (Health Canada 2011).</p> <p><u>Direct Mortality</u></p> <p>Activities that involve the removal of vegetation and erection of infrastructure will be limited to outside of the breeding window, where practical. By avoiding the sensitive breeding window (April 1st to May 31st), mortality on eggs and hatchlings should be avoided. If these windows cannot be avoided, pre-clearing surveys should be undertaken by a qualified individual to ensure no egg or hatchling mortalities occur.</p>	<p>No residual effects for habitat alteration, disruption of movement, direct/indirect mortality, wildlife attractants, and chemical hazards due to negligible to low impact on grouse.</p> <p>Residual effects for habitat loss include loss of suitable habitat and known lek sites resulting from clearing and/or grubbing. Rated as Not Significant (moderate).</p> <p>Residual effects for sensory disturbance include decreased usage or abandonment of nests resulting from road noise/drilling and blasting/loud Project activities. Rated as Not Significant (moderate).</p>	<p>Cumulative effects on habitat loss resulting from clearing/grubbing and earthworks and interactions with construction of other project infrastructure (i.e., Kamloops Forest District, Agriculture, city expansion, Kinder Morgan Pipeline) leading to loss of leks and suitable growing season habitat. Rated as Not Significant (minor).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				Vehicular mortalities may occur throughout all phases of the Project, especially during Construction and Operation when road use will be higher than in later stages. The frequency of collisions will be reduced through the implementation of speed limits and minimizing the number of vehicles using sites roads (Transportation Management Plan Section 11.20).		
Mammals	Section 6.17	Pipsell (Jacko Lake, Peterson Creek, Jacko Creek, Goose Lake and the Hunting Blind Complex)	<p>Effects on habitat loss resulting from clearing and/or grubbing and earthworks.</p> <p>Effects on habitat alteration resulting of result of fugitive dust deposition, soil compaction, and invasive species introduction.</p> <p>Effects on sensory disturbance resulting from loud construction-related project activities. Noise sensory disturbance include drilling and blasting, public and site road realignment/construction, use and maintenance, crushing waste rock, and loading, hauling and deposition of waste rock. Light disturbance include Project lighting, which will take place in the Construction and Operation phases.</p> <p>Effects on disruption of movement affecting wildlife movement due to Project related activities, such as excavation of the mine (movement barrier) or road construction (corridors).</p> <p>Effects on direct mortality due to vehicle/machinery use on roads, individuals getting killed while their habitat they are in is being removed, and individuals having an unexpected interaction with an anthropogenic feature.</p> <p>Effects on indirect mortality due to increased access for hunting or poaching, from range shifts leading to increased resource competition between individuals, or from increased hunting pressure by natural predators.</p> <p>Effects on wildlife attractants due to increase odours, food waste, sewage, garbage, and stored chemicals from construction crews and camps.</p> <p>Effects on chemical hazards due to wildlife ingesting, inhaling, or absorbing chemicals from improperly stored substances, dust on soil or vegetation, or</p>	<p><u>Habitat Loss</u></p> <p>Habitat loss will occur throughout the entire IDA. To reduce the impacts of habitat removal on reproducing individuals, habitat loss will be avoided during sensitive windows (rutting season, September and October).</p> <p>The following specific measures will be considered:</p> <ul style="list-style-type: none"> • Sensitive sites (DWR planning cells) will be avoided if at all possible and whenever practical to mitigate critical mule deer winter habitat loss; and • Additional habitat loss compensation for bats will include the installation of bat boxes near foraging sites. Bat boxes will be installed on free-standing poles or on facility walls where their presence will not interfere with facility operations. <p><u>Habitat Alteration</u></p> <p>Habitat alteration will be mitigated with:</p> <ul style="list-style-type: none"> • Fugitive dust mitigation measures as included in the Air Quality and Dust Control Plan (Section 11.6); • Invasive species mitigation measures as included in the Invasive Species Management Plan (Section 11.17); and • Water quality mitigation as included in the Water Management and Hydrometric Monitoring Plan (Section 11.7). <p><u>Sensory Disturbance</u></p> <p>A Noise Management Plan (Section 11.22) will be developed with the objective to ensure that noise levels during all phases of the Project are acceptably low for human and wildlife receptors, as per human health guidelines (Health Canada 2011).</p> <p><u>Disruption of Movement</u></p> <p>Disruption of movement is anticipated for badgers as a result of construction related activities. The Recovery strategy for the Badger in British Columbia (jeffersonii Badger Recovery Team 2006) recommends the following strategies to address habitat connectivity:</p> <ul style="list-style-type: none"> • Facilitate movement among populations by maintaining habitat across the landscape; and • Confirm movements of individuals among populations via monitoring. <p>Additional hair snagging efforts will help to determine where individuals are located across the landscape, the composition of the badger population in the LSA, and how they respond to the mine.</p>	<p>No residual effects for habitat alteration, direct/indirect mortality, and wildlife attractants due to negligible to low impact on mammals.</p> <p>Residuals effects for habitat loss on mammals (American badger, mule deer) due to removal of vegetation and habitat features from clearing and/or grubbing, and earthworks. Rated as Not Significant (moderate).</p> <p>Residual effects for sensory disturbance on mammals (American badger, bats) due displacement from roosts, dens, reduced ability to hunt from road noise/drilling and blasting/loud Project activities. Stress levels may increase and forage efficiency may decrease. Rated as Not Significant (minor).</p> <p>Residual effects for disruption of movement on mammals (American badger) due to inability to travel between areas of suitable habitat from clearing and/or grubbing, and earthworks. May result in increased energy expenditure/ reduced fitness/ decrease in reproductive success. Rated as Not Significant (moderate).</p> <p>Residual effects for chemical hazards on mammals (bats) due to ingestion of toxic water. Rated as Not Significant (minor).</p>	<p>Cumulative effects on habitat loss, including reduction in available habitat resulting from clearing/grubbing and earthworks and interactions with the construction of other project infrastructure. Rated as Not Significant (moderate).</p> <p>Cumulative effects on sensory disturbance due to loud, short duration noises, and traffic on project and public roads, resulting from drilling/blasting, crushing/hauling mine rock, road noise and increased access to other project sites/activities. May cause difficulty in locating prey/ detecting predators, may disturb roosting/hibernating individuals Rated as Not Significant (minor).</p> <p>Cumulative effects on disruption of moving, including Reduced ability to travel between areas of suitable habitat resulting from clearing/grubbing and earthworks and interactions with existing motorways. Individuals may require more energy to travel within home range, or may have difficulty locating a mate. Rated as Not Significant (minor).</p> <p>Cumulative effect on chemical hazards, including the accumulation of toxic/hazardous materials over time resulting from contact water and the release of hazardous materials into environment. Individuals may suffer reduced fitness or illness a result of exposure to various chemicals. Rated as Not Significant (minor).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			bioaccumulation from prey. Contact water (metal leaching and seepage) may also negatively affect mammals.	<p><u>Direct Mortality</u></p> <p>Direct mortality is anticipated for all species of bats present during construction of the Project, as well as for badgers during Construction and Operation of the Project.</p> <p>Vehicular mortalities may occur throughout all phases of the Project, especially during Construction and Operation when road use will be higher than in later stages. These collisions will be reduced through the implementation of speed limits and minimizing the number of vehicles using sites roads (Transportation Management Plan; Section 11.20).</p> <p><u>Wildlife Attractants</u></p> <p>Bats are attracted to laydown areas and storage yards because they associate smooth surfaces with sources of open water. Large pieces of smooth metal, plastic, or wood have similar properties to water when a bat is using echolocation to identify its surroundings. This can be mitigated by placing objects (e.g., rocks, cones, nets) on top of any large, smooth materials, allowing bats to differentiate between a smooth surface and one with foreign objects on it.</p> <p><u>Chemical Hazards</u></p> <p>Monitoring Plans that will be in place to mitigate chemical hazards include:</p> <ul style="list-style-type: none"> • Construction Waste Management Plan (Section 11.4); • Metal Leaching and Acid Rock Drainage Management and Monitoring Plan (Section 11.5); • Water Management and Hydrometric Monitoring Plan (Section 11.7); • Contaminated Sites Management Plan (Section 11.8); • Solid Waste Management Plan (Section 11.9); • Hazardous Waste Management Plan (Section 11.10); • Risk Management Plan (Accidents and Malfunctions) (Section 11.12); • Natural Hazards Management Plan (Section 11.13); • Emergency Response Plan (Section 11.14); • Surface Water Quality Management and Monitoring Plan (Section 11.23); and • Groundwater Quality Management and Monitoring Plan (Section 11.24). 		
Land and resource use	Section 8.4	Pipsell (Jacko Lake, Peterson Creek)	Effects on the City of Kamloops and TNRD, including project population growth and overlap with existing land use designations. Effects also include the perceived quality of land use in the proximity of the Project, including land used for recreational, agricultural, and residential purposes. Effects on ranching resulting from the	Mitigation measures related to the Land and Resource Use VC are a combination of measures proposed by other disciplines to minimize those effects and mitigations directly related to the Land and Resource Use activities and areas discussed in Section 8.4.4.2. Measures implemented by other disciplines to mitigate potential adverse effects will similarly reduce associated effects on Land and Resource Use activities and include: <ul style="list-style-type: none"> • Air Quality Mitigation as presented in the Air Quality and Dust Control Plan found in Section 11.6; 	Residual effects for land use planning due to presence of Project and activities, which may limit the ability of City of Kamloops to achieve land use planning goals and objectives. Rated as Not Significant (moderate). Residual effects for land use planning due to presence of Project and activities, which may limit the ability of the TNRD to	n/a

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			physical presence of the Project and through various Project activities.	<ul style="list-style-type: none"> Noise and Vibration mitigation as presented in the Noise and Vibration Management Plan found in Section 11.22; Water Quantity mitigation as presented in the Water Management Plan found in Section 11.6; and Traffic mitigation as presented in the Access Management Plan found in Section 11.21 and the Transportation Management Plan in Section 11.20. <p><u>Mitigation for Land Use Planning</u> KAM revised the Project configuration such that the majority of the Project Footprint now lies south of the municipal city boundary and farther away from the proposed City growth boundary neighbourhoods targeted for expansion (e.g., Aberdeen, Pineview Valley).</p> <p><u>Mitigation for Ranching</u> KAM is committed to working with Sugarloaf Ranch and other potentially affected ranchers to encourage continued ranching activities in proximity to the Project, so long that the safety of mining activities and/or the safety of ranching activities are not compromised. To this end, KAM has entered into a series of agreements with various potentially affected ranchers to address aspects such as acquisition of private lands, profit-à-prendre arrangements, and access arrangements.</p>	achieve land use planning goals and objectives. Rated as Not Significant (moderate).	
Current use of land and resources for traditional purposes	Section 8.5	SSN	Potential to affect availability of resources from the onset of the Construction phase through Operation, Decommissioning and Closure, and during Post-Closure. The Project will generate habitat losses associated with the clearing of vegetation required for the Construction of Project related infrastructure. The availability of fish, plants, and wildlife in the areas where suitable habitats are lost will change during the Construction phase and this effect will persist during the Operation phase while mine facilities expand to accommodate the waste rock and tailing resulting from mining and ore processing. The Project will generate fish habitat losses associated the Project Footprint development in Peterson Creek and the loss of the northeast arm of Jacko Lake. There is the potential that during the Post-Closure phase some areas of the Project could not be restored to a condition that would be suitable for activities such as fishing, hunting or trapping or other uses; therefore the	<p><u>Project Design Mitigation</u> As a result of concerns about potential effects to the Cherry Creek watershed, KAM relocated the TSF away from the Alkali Creek watershed (including Cherry Creek). The location and redesign to a conventional tailings storage facility reduces potential for dust by using wet tailings storage methods.</p> <p>As a result of concerns raised with respect to Inks Lake (an area widely used by waterfowl, other wildlife, and Aboriginal Groups) the updated GA no longer directly overlaps Inks Lake.</p> <p><u>Specific Mitigation Measures</u> CULRTP mitigation is embedded in the mitigation and management plans developed for other valued components and include the following key measures:</p> <ul style="list-style-type: none"> Mitigate potential effects of increased fishing pressure associated with the introduction of workers (who may fish in Jacko Lake) through no fishing policies for workers and contractors at site during their shifts; Develop an Access Management Plan (Section 11.21) in consultation with Aboriginal Groups to facilitate access to areas in the vicinity of the Mine Site; To accommodate SSN's use of Jacko Lake as an early spring trout fishery, KAM will avoid construction activities within Jacko Lake during spring; 	<p>Disruption of Ceremonial Use and changes in the experience of ceremonial or other cultural; characterized as Not Significant (moderate)</p> <p>Disruption of fishing uses, changes in the experience of fishing and the quality of fish resources; characterized as Not Significant (minor)</p> <p>Disruption of hunting uses, changes in the experience of hunting and the quality of the harvested resources Not Significant (moderate)</p> <p>Disruption of plant gathering uses, changes in the experience of plant gathering and the quality of the plants Not Significant (moderate)</p>	Cumulative effects were identified for all current use indicators, ranging from Not Significant (moderate) to Significant, with the Significant rating for Ceremonial Uses relating <u>only to SSN</u> . These rankings are driven by the degree of present disturbance to current use resources and sites in the LSA. The Project contributes to cumulative effects due to additional land disturbances that the development of the mine infrastructure will generate but the main contributing factor for the cumulative effects are the agricultural activities which cover 56% and 58% of the LSA and RSA respectively. It is expected that the overall levels of land disturbance would reach 90% in the LSA and 84% in the RSA, which would be partially mitigated once the Project reaches its Decommissioning and Closure stage. After implementation of mitigation, it is expected that the level of disturbance
		AIB		<p><u>Project Design Mitigation</u> As a result of concerns about potential effects to the Cherry Creek watershed, KAM relocated the TSF away from the Alkali Creek watershed (including Cherry Creek). The location and redesign to a conventional tailings storage facility reduces potential for dust by using wet tailings storage methods.</p> <p>As a result of concerns raised with respect to Inks Lake (an area widely used by waterfowl, other wildlife, and Aboriginal Groups) the updated GA no longer directly overlaps Inks Lake.</p> <p><u>Specific Mitigation Measures</u> CULRTP mitigation is embedded in the mitigation and management plans developed for other valued components and include the following key measures:</p> <ul style="list-style-type: none"> Mitigate potential effects of increased fishing pressure associated with the introduction of workers (who may fish in Jacko Lake) through no fishing policies for workers and contractors at site during their shifts; Develop an Access Management Plan (Section 11.21) in consultation with Aboriginal Groups to facilitate access to areas in the vicinity of the Mine Site; To accommodate SSN's use of Jacko Lake as an early spring trout fishery, KAM will avoid construction activities within Jacko Lake during spring; 	<p>Disruption of fishing uses, changes in the experience of fishing and the quality of fish resources; characterized as Not Significant (negligible)</p> <p>Disruption of hunting uses, changes in the experience of hunting and the quality of the harvested resources; characterized as Not Significant (negligible)</p>	

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			<p>potential for losses in availability of resources could extend during the Post-Closure phase and become permanent. Because of the need to protect the health and safety of the public, access to the Project will be restricted during the Construction and Operation phase.</p>	<ul style="list-style-type: none"> • Develop an alternate road access to Jacko Lake to facilitate access to Jacko Lake for fishing; • Communicating with Aboriginal Groups regarding when blasting is likely to occur and demarcating those areas; • Blast design to minimize disturbances to Jacko Lake and its users; • Prohibit employees and contractors from hunting while on shift; • Maps and a spatial database of known rare plant locations in the vicinity of Project facilities will be maintained and consulted to avoid impacts during Operation and maintenance activities. Ongoing monitoring by QEP or Project Environmental Manager will occur. The database should be actively updated as new information becomes available; and • Continue to support the permit system (provisions to allow Aboriginal harvesters access to ranch lands) for accessing ranch or grazing leases owned by KAM and not within the Project footprint. <p><u>Management Plans</u> The following management plans are of particular importance for CULRTP:</p> <ul style="list-style-type: none"> • Construction Waste Management Plan (Section 11.4); • Metal Leaching and Acid Rock Drainage Management and Monitoring Plan (Section 11.5); • Contaminated Sites Management Plan (Section 11.8); • Solid Waste Management Plan (Section 11.9); • Hazardous Waste Management Plan (Section 11.10); • Risk Management Plan (Accidents and Malfunctions) (Section 11.12); • Natural Hazards Management Plan (Section 11.13); and • Emergency Response Plan (Section 11.14). 	<p>Disruption of plant gathering uses, changes in the experience of plant gathering and the quality of the plants; characterized as Not Significant (negligible)</p>	<p>in the terrestrial habitat will remain at above 80% levels. Given that the upper west sub-catchments of Peterson Creek has been subject to a lesser degree of disturbance compared to other areas of the catchment and that fishing opportunities remain available in this area, the cumulative effect on fishing is considered to be of a lesser magnitude compared to terrestrial uses such as hunting, plant gathering and ceremonial use. The effects on the land and resource use from past, present and reasonably foreseeable future projects and activities in addition to the expected residual effects of the Project generate cumulative effects which vary between Not Significant (moderate) to significant. Without the Project, there are already significant cumulative effects from past and present activities on CULRTP. Key mitigation measures include implementation of Management plans including the Fish Habitat Mitigation and Offsetting Plan, the Transportation Management Plan and the Closure and Reclamation Plan as well as the implementation of No Fishing, Hunting, and Plant Gathering Policies.</p>
		LNIB			<p>Disruption of fishing uses, changes in the experience of fishing and the quality of fish resources; characterized as Not Significant (minor)</p> <p>Disruption of hunting uses, changes in the experience of hunting and the quality of the harvested resources; characterized as Not Significant (minor)</p> <p>Disruption of plant gathering uses, changes in the experience of plant gathering and the quality of the plants; characterized as Not Significant (minor)</p>	
		WP/CIB			<p>Disruption of fishing uses, changes in the experience of fishing and the quality of fish resources ; characterized as Not Significant (minor)</p> <p>Disruption of hunting uses, changes in the experience of hunting and the quality of the harvested resources ; characterized as Not Significant (minor)</p> <p>Disruption of plant gathering uses, changes in the experience of plant gathering and the quality of the plants ; characterized as Not Significant (minor)</p>	
		MNBC			<p>Disruption of fishing uses, changes in the experience of fishing and the quality of fish resources ; characterized as Not Significant (minor)</p> <p>Disruption of hunting uses, changes in the experience of hunting and the quality of the harvested resources ; characterized as Not Significant (minor)</p> <p>Disruption of plant gathering uses, changes in the experience of plant gathering and the quality of the plants; characterized as Not Significant (minor)</p>	

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
Outdoor recreation	Section 8.6	Pipsell (Jacko Lake, Goose Lake), Indian Reserves and Communities	<p>Effects on reduced opportunities as a result of changes in access due to project activities such as the removal of Goose Lake, increased traffic levels, impoundment of northeast arm of Jacko Lake, closure of Goose Lake Road, and blasting activities. Presence of the Project may preclude individuals from engaging in certain outdoor recreational activities or alter the current baseline experience.</p> <p>Effects on diminished outdoor recreation experience due to project activities such as the removal of Goose Lake, increased traffic levels, impoundment of northeast arm of Jacko Lake, closure of Goose Lake Road, and blasting activities.</p> <p>Effects on diminished outdoor recreational experience due to increase of labour force and population growth, adverse effects on air quality, and adverse effects on visual and aesthetic features.</p> <p>Effects on reduced opportunities related to reduced resources, such as adverse effects on fish and fish habitat in Jacko Lake and effects on wildlife in relation to hunting and trapping.</p>	<p><u>Changes in Access for Recreation Opportunities</u> Access to Jacko Lake for recreationalists and Aboriginal Groups will be altered as a result of the Project, including permanent loss of the northeastern arm of the lake, as well as temporary and intermittent access restrictions (e.g., to accommodate daily blasting activities). This effect will be managed by the implementation of an Access Management Plan (AMP), developed by KAM, which will address overall access to the site.</p> <p><u>Diminished Outdoor Recreation Experience</u> Measures to mitigate potential diminished outdoor recreation experience are largely contained within:</p> <ul style="list-style-type: none"> • Air Quality and Dust Control Plan can be found in Section 11.6; and • Noise Management Plan can be found in Section 11.22. <p><u>Visual Impact and Aesthetic Features</u> Mitigation measures include Project design, best management practices, adaptive management, monitoring, and offsetting or enhancement. Project design measures include implementation of good visual design principles during Project construction. Project infrastructure will also be designed where feasible to minimize its appearance. In addition to designing the Project to blend into the landscape more effectively, ongoing re-vegetation is planned to minimize the impact of larger Project components, such as the Mine Rock Storage Facilities.</p> <p><u>Traffic</u> Potential traffic effects related to Project activities will be mitigated through the implementation of the Transportation Management Plan (Section 11.20).</p> <p><u>Reduced Availability of Natural Resources</u></p> <p><i>Fish and Fish Habitat</i> Section 11.25 (Fisheries and Aquatic Life Monitoring Plan) includes details on how the Project effects will be mitigated. Measures to mitigate potential changes in fish productivity and fish habitat include continued monitoring of fish populations, contaminants, and nuisance factors. KAM will seek ongoing interaction with anglers to help ensure issues are being addressed and intended mitigation outcomes are achieved. KAM will also work with fisheries regulators and other stakeholders (e.g., through the recreation/angling working group described above) to identify suitable opportunities for fish habitat offsetting that could support the development of new or improved fishing areas.</p> <p><i>Wildlife</i> Mitigation includes measures to minimize habitat loss effects for mule deer and game birds (e.g., ruffed grouse); as well as effects related to habitat alteration, sensory disturbance, disruption of movement and direct mortality for game birds.</p>	<p>Residual effects for reduced opportunities as a result of changes to access due to activities for project development and Operation. Rated as Not Significant (moderate).</p> <p>Residual effects for diminished outdoor recreation experience due to activities for project development and Operation (project activities, increase of labour force and population, effects on air quality and visual and aesthetic features). Rated as Not Significant (moderate).</p> <p>Residual effects for reduced opportunities related to reduced resources (fish, fish habitat, and wildlife) due to activities for project development and Operation. Rated as Not Significant (minor).</p>	n/a

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
Archaeological sites	Section 9.1	Pipsell (Jacko Lake, Peterson Creek, Hunting Blind Complex)	<p>Disturbance of known archaeological sites identified in the AIA due to activities associated with the movement, excavation, or disturbance of soil, and clearing and grubbing of vegetation.</p> <p>Disturbance of unknown archaeological sites, including those currently unrecorded that may be identified during ground altering activity, due to activities associated with the movement, excavation, or disturbance of soil, and clearing and grubbing of vegetation.</p>	<p><u>Known Archaeological Sites</u></p> <p>It is anticipated that mitigation measures at these sites will include systematic data recovery or preservation through site capping. Due to the stated importance of cultural features associated with Jacko Lake and the Hunting Blind Complex to the SSN, additional mitigation measures are provided for these sites and residual effects are anticipated based on the significance of these sites as follows.</p> <p><i>Jacko Lake</i></p> <p>Archaeological sites EdRc-5, EdRc-6, EdRc-7, and EdRc-8 are located along the shores of Jacko (Pipsell) Lake which is associated with the Trout Children Story (CEAA 2015). These sites consist of lithic scatters. If avoidance of these sites is not feasible additional investigation of these sites is recommended, focusing on determining the antiquity and function of the sites, understanding the cultural values associated with the sites and how these could be related to possible mitigation options. A final mitigation strategy for these sites will be determined through discussion between KAM, SSN, and the Archaeology Branch.</p> <p><i>Hunting Blind</i></p> <p>Archaeological site EdRc-25 consists of three semicircular petroforms within a series of rock outcrops north of Peterson Creek. Extensive subsurface testing (n = 688) and a survey was conducted at the site; however, no prehistoric cultural material was identified at the site (Morin 2014). Based on the available information the antiquity and function of site EdRc-25 cannot be confirmed (Morin 2014); however, the SSN Cultural Heritage Study describe these as hunting blind features with “extremely high interest and irreplaceable value” (Ignace 2014:135).</p> <p>As EdRc-25 is within the mine pit, avoidance of the site is not feasible. Additional investigation of this site is recommended, focusing on determining the antiquity and function of the site, understanding the cultural values associated with the site and how these could be related to possible mitigation options. The SSN Preliminary Mitigation Report states that removal and reconstruction of the petroforms is not an acceptable solution (SSN 2014). In addition to systematic data recovery of the archaeological data mitigation measures for the cultural effects will be determined through consultation between KAM, SSN and the Archaeology Branch.</p> <p><u>As-yet Unknown Archaeological Sites</u></p> <p>Any revisions to the currently proposed Project footprint will be reviewed by a qualified professional archaeologist. The Chance Find Procedure for the Project will be used to provide a framework for the avoidance or mitigation of archaeological sites, if present, that were not identified during the AIA. To protect archaeological sites within the LSA, mine employees and contractors will be</p>	<p>Residual effects for disturbance of 44 known archaeological sites resulting from ground disturbance during construction. Rated as Not Significant (minor).</p> <p>Residual effects for disturbance of known archaeological site EdRc-25 (Hunting Blind Complex) due to ground disturbance during Construction, resulting in impact with culturally significant features. Rated as Not Significant (moderate).</p> <p>Residual effects for disturbance of unknown archaeological sites during all phases of the Project. Rated as Not Significant (minor).</p>	n/a

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				educated about the Chance Find Procedure. Where avoidance is not possible, any alteration to an archaeological site protected under the HCA (1996) will require a Section 12 Site Alteration Permit from the Archaeology Branch. Additional mitigation measures may be required. These measures will be determined in consultation with local Aboriginal Groups and the Archaeology Branch.		
Heritage sites	Section 9.2	Pipsell (Jacko Lake, Peterson Creek, Goose Lake, Cherry Creek, Hunting Blind Complex)	Disturbance of paleontological sites. One small area of rocks of the Kamloops Group that may have fossil potential located along the power transmission corridor. Disturbance of Aboriginal heritage sites, including destruction of the Hunting Blind Complex (EdRc-25) and associated historic, cultural and instructional values, effects on potential burial cairns, effects on Jacko Lake, and potential effects to historic campgrounds (Cherry Creek). Disturbance of non-Aboriginal heritage sites including the location of the St. Peter's Church and built heritage associated with early settlement of the area.	Avoidance is always the preferred mitigation measure. To facilitate the avoidance of heritage sites KAM will arrange for site orientation and training of all employees and on-site personnel/contractors with regards to compliance with the Heritage Conservation Act (1996) and the use of the Project's Heritage Chance Find Procedure. Training and site orientation will be provided for all new employees during their induction. This training will focus on not disturbing known heritage sites, the procedure in place for responding to newly identified sites, as outlined in the Project's Heritage Chance Find Procedure, and how to report these sites or observed site impacts. Copies of the Project's Chance Find Procedure will be kept on-site for reference and on file by KAM.	Residual effects anticipated as Not Significant (minor) for the disturbance of paleontological sites, Aboriginal heritage sites, and non-Aboriginal heritage sites with the application of mitigation and management measures including site avoidance, Project personnel education, and implementation of the Heritage Management Plan and Chance Find Procedure.	n/a
Air quality	Section 10.1	Indian Reserves and Communities	Construction activities will produce air emissions from fuel combustion for mobile equipment (direct emissions) and fugitive dust (indirect emissions). Operation activities will produce air emissions from fuel combustion for the mobile equipment (e.g., direct emissions), ore processing and concentrate handling and fugitive dust (indirect) emissions from a variety of exposed surfaces (e.g., exposed tailings, disturbed land surfaces and mine rock piles). The activities during the Closure and Reclamation and Post-Closure phases do not generate sufficient air emissions to justify a quantitative analysis using an air dispersion model.	Air Quality Mitigation as presented in the Air Quality and Dust Control Plan (Section 11.6): <ul style="list-style-type: none"> • Design mitigation measures such as installation of covers over coarse and fine ore stockpiles; • Dust collectors and use of covered concentrate transport trucks; and • Haul road-associated dust mitigated with use of coarse gravel and aggregate material on road beds and minimizing haul distances. 	Change in CAC concentrations rated as Not Significant (moderate). The Project will generate atmospheric emissions (i.e., particulate matter and combustion gases) during the Construction and Operation phases, which will increase the concentration of Criteria Air Contaminants (CAC) in the vicinity of the Project. The change in CAC concentrations is considered not significant (moderate) for the Construction and Operation phases. Although there are predicted exceedances for 24-hour TSP, 24-hour PM ₁₀ and 24-hour PM _{2.5} concentrations at the boundary of the Mine Site, the area of exceedances is small and it corresponds to undeveloped grasslands without permanent residents. In addition, the Project has a very limited effect on the air quality in the built-up urban area of Kamloops. Project effects will cease during the Closure and Decommissioning phase.	The cumulative air quality effects assessment for future projects determined that there were no Project interactions with approved, announced, or foreseeable future projects. The assessed residual cumulative effect on the CAC concentrations for the Construction phase and Operation phase was considered not significant.

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
Domestic water quality	Section 10.2	Peterson Creek and Indian Reserves and Communities	<p>Effects on municipal water quality due to ore dust containing traces of metals deposited to the surrounding environment.</p> <p>Effects on groundwater quality in the Peterson Creek aquifer, potentially influenced by Project activities over the lifetime of the mine. Effluent discharge and seepage may occur over time and eventually contact groundwater supplies.</p>	<p>The mitigation measures described in the surface water quality effects assessment will reduce the potential for changes to surface water quality in the surrounding lakes, streams, and rivers in the LSA that species of country food are exposed to. These measures are part of the Water Management Plan as included in the Water Management and Hydrometric Monitoring Plan (Section 11.7).</p> <p>A resolution policy will also be developed to address complaints regarding groundwater quality from Knutsford groundwater users, which will outline how people may file a complaint, and the protocol to respond to these complaints. These mitigations are considered to be effective in addressing the potential chemical effects to domestic water quality.</p>	<p>No residual effects for domestic drinking water since change in drinking water quality represents one component of the total human health risk associated with the Project, and cannot be independently assessed for significance. Other contributing components include the consumption of country foods. The predicted change in quality to country foods and drinking water are applied in the human health VC (Section 10.4) to determine the significance of potential changes to human health risk.</p>	n/a
Country foods	Section 10.3	Jacko Lake, Peterson Creek, Indian Reserves and Communities	<p>Effects on trace metal concentrations in tissue (mammals, birds, fish, traditional plants) occurring as a result of changes in trace metal concentrations in soil and surface water. Changes in trace metal concentrations in soil driven by the Project's contribution to the deposition of metal-bearing dust to surface soil over the operational life of the mine.</p> <p>Effects on trace metal concentrations in surface water in the Peterson Creek watershed driven by effluent discharge and the seepage of water from mine operations, to Jacko Lake and Peterson Creek.</p>	<p>Air Quality Mitigation as presented in the Air Quality and Dust Control Plan (Section 11.6):</p> <ul style="list-style-type: none"> • Design mitigation measures such as installation of covers over coarse and fine ore stockpiles; • Dust collectors and use of covered concentrate transport trucks; and • Haul road-associated dust mitigated with use of coarse gravel and aggregate material on road beds and minimizing haul distances. <p>Water Quality Mitigation as included in the Water Management and Hydrometric Monitoring Plan (Section 11.7):</p> <ul style="list-style-type: none"> • Design mitigation measures for the Peterson Creek Diversion to direct excess water into the Peterson Creek Downstream Pond, and away from influences from mining activities; • Design mitigation measures for the mine rock storage facility (MRSF) to divert and collect runoff and seepage water into collection ponds; and • Design mitigation measures for the tailings storage facility to divert and collect runoff and seepage water into collection ponds. <p>Groundwater Mitigation as included in the Groundwater Quality Management and Monitoring Plan (Section 11.24):</p> <ul style="list-style-type: none"> • Water management ponds lined with a synthetic liner to intercept seepage and runoff from the East MRSF and tailings storage facility. The performance of which is monitored using an under liner drainage system; and • Reclamation of the East MRSF. 	<p>No residual effects for country foods since exposure to trace metals through the consumption of country foods and backyard garden produce represents one component of the overall exposure to trace metals from the Project. Refer to human health VC (Section 10.4) for discussion of effects from across exposure pathways.</p>	n/a
Human health	Section 10.4	Jacko Lake, Peterson Creek, Indian Reserves and communities	<p>Effects on air quality and human health resulting from emission and dispersion of criteria air contaminants and metals from project activities.</p> <p>Effects on country foods due to deposition of metals from dust onto soil as a result of project activities, affecting soil quality and</p>	<p>Air Quality Mitigation as presented in the Air Quality and Dust Control Plan (Section 11.6):</p> <ul style="list-style-type: none"> • Design mitigation measures such as installation of covers over coarse and fine ore stockpiles; • Dust collectors and use of covered concentrate transport trucks; and • Haul road-associated dust mitigated with use of coarse gravel and 	<p>Residual effects anticipated for human health (including on air quality, soil quality, surface water quality, groundwater quality, and country foods) with the application of mitigation and management measures. Rated as Not Significant (minor).</p>	n/a

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
			<p>surface water quality, with subsequent chemical uptake by wildlife and vegetation (Jacko Lake, Peterson Creek). Effects on drinking water and country foods due to discharges and runoff from project operations, releasing chemicals into groundwater or surface water (Jacko Lake, Peterson Creek).</p>	<p>aggregate material on road beds and minimizing haul distances. Water Quality Mitigation as included in the Water Management and Hydrometric Monitoring Plan (Section 11.7):</p> <ul style="list-style-type: none"> • Design mitigation measures for the Peterson Creek Diversion to direct excess water into the Peterson Creek Downstream Pond, and away from influences from mining activities; • Design mitigation measures for the mine rock storage facility (MRSF) to divert and collect runoff and seepage water into collection ponds; and • Design mitigation measures for the tailings storage facility to divert and collect runoff and seepage water into collection ponds. <p>Groundwater Mitigation as included in the Groundwater Quality Management and Monitoring Plan (Section 11.24):</p> <ul style="list-style-type: none"> • Water management ponds lined with a synthetic liner to intercept seepage and runoff from the East MRSF and tailings storage facility. The performance of which is monitored using an under liner drainage system; and • Reclamation of the East MRSF. 		
Noise and vibration	Section 10.5	Jacko Lake and Indian Reserves and communities	<p>Effects on noise due to project activities resulting in a change in the existing acoustic environment that may affect humans and wildlife.</p> <p>Effects on vibration due to project activities resulting in a change in the existing vibration environment that may affect humans, structures, wildlife, and aquatic life.</p>	<p><u>Mitigation by Project Design</u></p> <p><i>Noise</i></p> <p>Noise mitigation by Project design will be achieved by reducing the noise emissions to receptors by increasing buffer distance, reducing equipment usage, and the use of enclosures. Some of the mitigation measures include:</p> <ul style="list-style-type: none"> • Conveyor from crusher to plant will be covered to reduce noise emission; • Coarse ore stockpile enclosure will provide noise attenuation for equipment activities; and • Heavy equipment such as mills, crusher, compressors, pumps, and motors will be located inside buildings. <p><i>Vibration</i></p> <p>Vibration mitigation by Project design will be achieved by blast design. Some of the mitigation measures include:</p> <ul style="list-style-type: none"> • Blast designs were based on the threshold at the closest location (i.e., Jacko Lake) while other receptors are located much further away; and • Blast designs were developed to reduce annoyance effects from blast-induced air blast overpressure. <p><u>Mitigation by Best Management Practices during all Project Phases</u></p> <p><i>Noise</i></p> <p>A Noise and Vibration Management Plan (Section 11.22) will be developed to mitigate noise during the construction and operation phases. The plan will consider:</p> <ul style="list-style-type: none"> • Provide training and instruction for equipment operators related to the Noise and Vibration Management Plan; 	<p>Residual effects for noise include change in acoustic environment (increase of baseline sound level), quantified by daytime (L_d), nighttime (L_n), and day-night (L_{dn}) equivalent sound level at a receptors, resulting from Construction and Operation activities. Rated as Not Significant (minor).</p> <p>Residual effects for vibration include change in vibration environment (increase of baseline vibration level), quantified by ground vibration and air blast level at receptors, resulting from Construction and Operation activities. Rated as Not Significant (minor).</p>	<p>Cumulative effects on noise and vibration due to noise emissions and interaction with other activities such as city expansion and growth, agriculture, ranching, and recreational hunting/fishing practices, and existing infrastructure, resulting in change in acoustic environment, quantified by daytime (L_d), nighttime (L_n), and day-night (L_{dn}) equivalent sound level at a receptors. Rated as Not Significant (moderate).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				<ul style="list-style-type: none"> • Maintain records for the employee training related to Noise and Vibration Management Plan; • Regularly maintain all machinery and equipment to ensure that noise emissions are within the range set by manufacturers when available; and • Implement a process to address noise complaints in a timely manner. <p><i>Vibration</i></p> <p>A Noise and Vibration Management Plan (Section 11.22) will be developed to mitigate noise during the construction and operation phases. The plan will consider:</p> <ul style="list-style-type: none"> • Monitor ground vibrations and correlate with blast design predictions to determine if changes to blast design or procedures are necessary to reduce vibration; • Provide training and instruction for equipment operators related to the Noise and Vibration Management Plan; • Maintain records for the employee training related to Noise and Vibration Management Plan; and • Implement a process in the Noise and Vibration Management Plan (Section 11.22) to address vibration complaints in a timely manner. 		
Community health and well-being	Section 10.7	Indian Reserves and communities	<p>Effects on the biophysical environment as a result of project activities.</p> <p>Effects on traffic volume over the life of the Project, particularly, Construction and Operation phases, affecting road conditions and the safety of road users.</p> <p>Effects on population changes during the Construction and Operation phases resulting from temporary/non-local workforce and in- and out-migration of workers. Potential risk of physicians and/or other medical professionals leaving the community.</p> <p>Effects on income from increased employment and disposable income. Increases in disposable income can result in increased spending on activities that are deleterious to the health, well-being, and safety of individuals, families, and communities.</p> <p>Effects on community image for the City of Kamloops.</p>	<p>The Traffic Impact Assessment and Traffic Management Plan prepared by Opus International (2015) propose a variety of mitigation measures to reduce the potential effects of Project-related traffic during the Construction and Operation phases. For a complete list, please see Appendix 8.1-A and Section 11.20, Transportation Management Plan. Key mitigation measures include:</p> <ul style="list-style-type: none"> • Implementing carpooling incentives during Construction and Operation to increase the base car-pooling rate from 7% to 15%; • Providing the Construction workforce personnel shuttles from key locations within the City to the Project Site to reduce personal vehicle traffic during construction; and • Staggering shifts during the Construction phase and, to a lesser extent, during the Operation phase to reduce traffic during AM and PM peak traffic periods. <p>KAM will also implement a Transportation Management and Control Plan (TMCP) and Transportation Management Plan (TMP) (Section 11.20) as part of their Environmental Management System for the Project.</p> <p>Since the potential effect of interaction between construction workers and residents is difficult to predict, ongoing communication and monitoring will be important. Mitigation measures intended to help reduce potential effects include:</p> <ul style="list-style-type: none"> • Within the Socio-economic Monitoring Plan (Section 11.29), KAM will develop a monitoring program for Community Health 	<p>Residual effects for change in the biophysical environment due to emissions in air and water, which may lead to human ingestion. Rated as Not Significant (minor).</p> <p>Residual effects for increased traffic volume and the potential for increased accidents due to transportation of people, materials and equipment to and from Project site. Rated as Not Significant (minor).</p> <p>Residual effects for population changes due to increase in workforce personnel resulting in increase of health care demands. Rated as Not Significant (moderate).</p> <p>Residual effects for community image due to the presence of the Project, causing stress and anxiety. Rated as Not Significant (moderate).</p>	<p>Cumulative effects on potential for increased traffic accidents due to project activities and interaction with the Kinder Morgan Pipeline. Rated as Not Significant (minor).</p>

Table 13.2-2. Summary of Findings from Key Valued Components (continued)

Valued Component	Section of the Application/EIS	CULRTP Geographic Component Considered	Potential Effects	Proposed Mitigation	Residual Effects	Cumulative Effects
				<p>and Well-being in conjunction with an advisory committee. The advisory committee will be comprised of relevant representatives from the City, the TNRD, and health and social service providers. While the program is anticipated to monitor areas of concern, such as STI rates, rates of adverse interactions between Kamloops residents and workers, rates of substance misuse, the nature of monitoring will depend on availability of data; and</p> <ul style="list-style-type: none"> • Ongoing dialogue with service organizations (e.g., RCMP) to inform them of workforce requirements or changes. <p>During the Construction phase, KAM will require the Engineering, Procurement, and Construction contractor to secure a dedicated general practitioner for the temporary construction workforce.</p> <p>Monitoring of environmental effects of the Project and transparent communication of monitoring results in a timely way to residents of the LSA, in order that they are aware of the continuing quality of their environment. A Community Liaison Group is proposed as a vehicle for ongoing dialogue about monitoring results and environmental quality.</p>		

The Project phases are:

- **Construction:** 2 years;
- **Operation:** 23 years;
- **Decommissioning and Closure:** 5 years (includes project decommissioning, abandonment and reclamation activities, as well as temporary closure care and maintenance); and
- **Post-Closure:** 5+ years (includes ongoing reclamation activities and Post-Closure monitoring).

Activities occurring during each phase of the Project are described in Chapter 3.

13.2.4.2 *Spatial Boundaries*

The Project is located within the SSN traditional territory, the Secwépemc Nation traditional territory (WP/CIB) and the Nlaka'pamux Nation (LNIB and AIB). It is assumed that each Aboriginal Group may practice interests anywhere in their traditional territory. The spatial boundaries for the assessment of effects on Aboriginal interests are as follows:

- **SSN.** The SSN traditional territory (Figure 12.2-1 in Chapter 12) represents the boundary used for assessing potential effects on SSN's asserted interests.
- **LNIB.** The LNIB traditional territory is represented in the larger Nlaka'pamux Nation, and therefore the boundaries for assessing effects on LNIB asserted interests will rely on the Nlaka'pamux traditional territory (Figure 12.1-2 in Chapter 12).
- **AIB.** The boundaries of the AIB traditional territory were unavailable at the time of writing. However, the AIB belong to the larger Nlaka'pamux Nation, and therefore the boundaries for assessing effects on AIB asserted interests will rely on the Nlaka'pamux traditional territory (Figure 12.1-2 in Chapter 12).
- **WP/CIB.** The boundaries of the WP/CIB traditional territory were unavailable at the time of writing. However, the WP/CIB belong to the larger Secwépemc Nation, and therefore the boundaries for assessing effects on WP/CIB asserted interests will rely on the Secwépemc traditional territory (Figure 12.1-1 in Chapter 12).
- **MNBC.** No spatial boundaries for assessing effects on Métis interests were utilized because the Métis do not have an asserted traditional territory.

Relevant study areas identified in VCs that are related to asserted Aboriginal interests are also considered in the assessment, in particular, when defining the geographic extent of the potential effects on Aboriginal interest.

13.3 IDENTIFYING INTERESTS WITH AFFECTED ABORIGINAL GROUPS

This section describes the efforts and activities undertaken by KAM to develop an understanding of the identified Aboriginal Groups' asserted interests. KAM developed an understanding of the identified Aboriginal Groups' asserted interests through a range of activities, including:

- consultation with Chief, Council, and community representatives;

- the SSN Cultural Heritage Study (Ignace 2014);
- the MNBC - KGHM/ Ajax Mine Initial Project Report (MNBC 2014);
- correspondence between KAM (letters and email) and Aboriginal Groups;
- community open houses;
- site tours;
- primary research, such as interviews with Aboriginal community members and leadership;
- review of previous environmental assessments (EA; Kinder Morgan Pipeline and affidavits) and legal cases;
- information package provided by SSN on July 8 2015 at the Working Group Meeting;
- letters and comments submitted to the CEA Agency and BC EAO; and
- secondary research that involved a range of historic and ethnographic studies, including the following:
 - National Energy Board: Oral Presentation from Chief Ignace. 2014. Trans Mountain Pipeline ULC: Trans Mountain Expansion Project. *Hearing Order OH-001-2014*. November 18, 2014. Kamloops, BC;
 - Turner, N. 1947. *Food Plants of British Columbia Indians: Part 2/Interior Peoples*. Royal British Columbia Museum Publishing: Victoria, BC;
 - Turner, N. 1997. *Food Plants of Interior First Peoples*. Royal BC Museum Handbook: Victoria, BC;
 - Teit, J. 1898. *Traditions of the Thompson River Indians*. London: Houghton, Mifflin and Co;
 - Tera Environmental Consultants. (2013). *Environmental and Socio-economic Assessment for the Trans Mountain Pipeline ULC Trans Mountain Expansion Project – Volume 5D – Traditional Land and Resource Use Technical Report*. Vancouver, BC;
 - Ignace, M. 1995. Jules et al. v. Harper Ranch et al. *Anthropological Expert Evidence Report*;
 - LeBourdais, S. 2009. SEXQÉLTKEMC: The Lakes Division of the Secwépemc Nation. *Tult: Transformation of Energy into Matter*. Retrieved from the British Columbia Utilities Commission Proceedings. July 24, 2009;
 - Highland Valley Copper. 2007. *First Nations Considerations Report*. Retrieved from Highland Valley Centre for Sustainable Waste Management Environmental Assessment Certificate Application;
 - Government of BC. 1995. *Kamloops Land and Resource Management Plan*;
 - Dawson, G. M. 1891. *Notes on the Shuswap People of British Columbia*. Royal Society of Canada: Ottawa, ON;
 - Blackstock, M. D. and R. McAllister. 2004. First Nations Perspective on the Grasslands of the Interior of British Columbia. *Journal of Ecological Anthropology* Vol. 8, 24-46; and
 - Wickwire, W. C. 1994. To See Ourselves as the Other's Other: Nlaka'pamux Contact Narratives. *Canadian Historical Review* Vol. 75, Number 1, 1-20.

KAM understands the identification of asserted Aboriginal interests that could be affected by the Project is on-going and will continue its efforts in this regard. As new information about asserted

Aboriginal interests is shared, KAM will endeavour to work with Aboriginal Groups to determine whether the Project has the potential to affect these interests and, if so, develop appropriate mitigation and avoidance measures.

13.4 INTEGRATION OF ABORIGINAL TRADITIONAL KNOWLEDGE / TRADITIONAL LAND USE

Traditional Knowledge (TK) refers to the unique knowledge held by Aboriginal peoples about the local environments in which they live. TK is often difficult to define; BC EAO defines it as “a body of knowledge built up over time, mainly through oral history. It includes an understanding of plants and animals, the functioning and management of ecosystems, and may entail knowledge of uses of certain species of flora and/or fauna for food, medicines, fuel or shelter” (BC EAO 2006). The BC EAO encourages proponents to consider TK in the Application/EIS. Traditional Land Use (TLU) focuses more specifically on the use of lands and resources, particularly with respect to rights and/or occupancy of a particular area. TLU information can typically be represented spatially and involves the harvest of traditional resources (hunting, trapping, fishing, gathering, travelling over a geographic area). TLU information may also include trails, habituation sites, and ceremonial or cultural areas.

The CEA Agency provides guidance on the integration of TK into the EIS. Section 16.1 of the *Canadian Environmental Assessment Act* (CEAA) notes “community knowledge and Aboriginal traditional knowledge may be considered in conducting an environmental assessment” (CEA Agency 2013). CEA Agency’s “Considering Aboriginal traditional knowledge in environmental assessments conducted under the *Canadian Environmental Assessment Act -- Interim Principles*” (CEA Agency 2013) notes that TK can assist with:

- scoping the project and the assessment;
- the collection of baseline information;
- consideration of the environmental effects of a project;
- evaluation of environmental effects and the determination of their significance;
- evaluation of any cumulative environmental effects of the project;
- evaluation of the effects of the environment on the project;
- identification or modification of mitigation measures; and
- design and implementation of any follow-up programs.

Key principles for consideration of TK/TLU include working with the Aboriginal Groups to collect the information, seeking prior informed consent, respecting intellectual property rights, and collecting TK/TLU in collaboration with the community, and merging Aboriginal TK with western science (CEA Agency 2013).

KAM understands the importance of collecting and considering TK and Traditional Land Use (TLU) information. Individuals and families most dependent on local resources for spiritual, cultural, and basic needs are best positioned to articulate the importance of places, areas, and activities but also to

share knowledge that is grounded in learned experience. With this in mind, KAM implemented the following approaches to collect and incorporate TK:

- funding TK/TLU studies (e.g., KAM provided funding to SSN for a Cultural Heritage Study [CHS]);
- site tours with key community representatives such as Chief and Council, elders and knowledge holders;
- literature reviews and secondary data collection;
- meetings with Aboriginal leadership; and
- community meetings.

Non-confidential information pertaining to TK/TLU and Aboriginal asserted interests and other concerns was disseminated to the scientists and researchers involved in development of baseline studies and the effects assessments through bi-weekly meetings and issues tracking tables. In addition, meetings were held with key discipline leads to review relevant TK/TLU information (e.g., plant and wildlife species important to Aboriginal Groups) as well as other comments and concerns raised by Aboriginal Groups.

TK/TLU information and Aboriginal asserted interests and other concerns identified were carefully considered and where appropriate incorporated into baseline studies, effects assessments, and mitigation and management and monitoring strategies. Aboriginal Groups' inputs have also been considered in the selection of VCs and indicators assessed in Part B of the Application/EIS. As a result of input from Aboriginal Groups, the following changes were made into the Application/EIS (see Table 13.4-1).

13.5 LOCATION OF THE PROJECT IN RELATION TO ABORIGINAL TRADITIONAL TERRITORIES

The Project is located within the traditional territories of the SSN, the WP/CIB (Secwépemc Nation traditional territory) and the Nlaka'pamux Nation (including LNIB and AIB). The overlap between the traditional territories and the Project area is described in Table 13.5-1.

13.6 STK'EMLUPSEMC TE SECWÉPEMC NATION

The Project lies within the asserted traditional territory of the SSN. The SSN traditional territory covers approximately 1,252,600 hectares (ha), of which 0.14% or 1,705 ha overlap the Project components (Figure 12.2-1 in Chapter 12). This territory includes the Columbia River valley to the Fraser River, and south to the Arrow Lakes (Tk'emlúps Website 2014).

13.6.1 Past, Current, and Anticipated Land Uses

This section of the Application/EIS provides an overview of past, current, and future use of land and resources by the SSN. Aboriginal Groups' information considered in the Application/EIS is presented in detail in Chapter 12; KAM's efforts to engage with Aboriginal communities are described in Chapter 15.

Table 13.4-1. Changes Made to the Application/EIS as a Result of Input from Aboriginal Groups

TK/TLU	Modifications	Section of the Application
Range of traditional use plants identified in the CHS and through literature reviews	<p>Additional fieldwork and analysis to better understand the presence of traditional use plants within the Local Study Area (LSA) and Regional Study Area (RSA).</p> <p>TLU plants were included as indicators for the assessment of effects on the Rare Plants VC.</p> <p>Examples of traditional use plants considered (and also found within the rare plants LSA) include Yarrow, Saskatoon berries, Kinnikinnick, Big sagebrush, Sedges, Red-osier Dogwood, Scouler's Hawkweed, Rocky Mountain Juniper, Lemonweed, Qweowile / Large-fruited Desert-parsley, Ponderosa Pine, Douglas fir, Willows, Soapberries and Cattail.</p>	<p>Section 6.8 Section 8.5 Part C</p>
The CHS, literature reviews, and consultation identified species of interest (wildlife, fish). This information was provided to discipline leads	<p>During the selection of Valued Components, discipline leads screened species identified by Aboriginal Groups for inclusion in baseline studies and to be considered as indicator species for the assessment of effects on VCs. For example, the American Badger was included as an indicator species in Section 6.17 and Section 8.5.</p>	All VC included in Part B of the Application/EIS
Information in the CHS and from consultation with respect to the cultural and ceremonial values of Jacko Lake and Pipsell (including the Hunting Blind Complex)	<p>Current Use of Lands and Resources for Traditional Purposes was added as a new VC (Section 8.5) under the Social Pillar (Chapter 8). This VC considers the uses – including ceremonial and other cultural uses – for all the components of Pipsell as stated by SSN.</p> <p>CULRTP informs the assessment of effects of the Project on Aboriginal Rights and Other Interests.</p>	Section 8.5 Part C
Concern about effects to the integrity of Jacko Lake	<p>The drilling program required for the geotechnical investigations adjacent to Jacko Lake we modified to avoid if possible or minimize effects on Jacko Lake surrounding areas.</p>	Appendix 6.6-A
Concern about effects to heritage resources and use of SSN field assistants (during archaeological investigations)	<p>Assisted in developing an understanding of the Hunting Blind Complex and Pipsell. Information provided during archaeological investigations from field assistants influenced the level of effort and areas to focus survey effort.</p>	Chapter 9 Section 8.5 Part C
Information in the CHS regarding heritage and archaeological resources	<p>The assessment on heritage and archaeological sites utilized information in the CHS to inform understanding of cultural values in relation to the Hunting Blind Complex.</p>	Chapter 9 Section 8.5 Part C
Information on the seasonal round and early spring trout fishery in Jacko Lake	<p>The fish habitat and fish populations VC recognizes that Jacko Lake has unique features due to its lower elevation; providing earlier trout fishing opportunities in comparison to other lakes in the region.</p>	Section 6.7 Section 8.5 Part C

(continued)

Table 13.4-1. Changes Made to the Application/EIS as a Result of Input from Aboriginal Groups (completed)

TK/TLU	Modifications	Section of the Application
Traditional use plants identified in the CHS	<p>The Reclamation and Closure Plan has objectives of re-establishing grasslands and wildlife habitat. Opportunities to include traditional use plant species into the reclamation seed mix will be pursued with SSN.</p>	Section 3.17
Consumption of country foods and fear of potential contamination identified through consultation with Aboriginal Groups	<p>Species and consumption rates for country foods incorporated into the Human Health and Ecological Risk Assessment (HHERA). Fish ingestion rates for Aboriginal Groups were adopted from Health Canada (2009). The major fishing location within the LSA is Jacko Lake, and fish (i.e., trout) from this stocked lake can only be obtained using rod and reel – nets are prohibited. While Jacko Lake is a popular fishing spot it is unlikely that Aboriginal Groups obtain a substantial portion of their fish intake from Jacko Lake or Peterson Creek. If Aboriginal Groups were to obtain a substantial portion of their fish intake from the general Kamloops area, it is more likely they would obtain it from the Thompson River, where the principal target species is salmon and devices such as nets and fishing wheels are permitted. As a result, Aboriginal and non-aboriginal residents are assumed to obtain 10% of their total fish intake from Jacko Lake.</p> <p>Wild meat ingestion rates for the Aboriginal receptor were adopted from Health Canada (2004), and Aboriginal people are assumed to obtain 100% of their wild meat intake from the LSA. The intakes of three types of wild meat are assessed in this risk assessment: deer, snowshoe hare and grouse. These species were identified to be potentially present in the LSA and testimonials from local hunters indicate that these species are hunted in the area. It was assumed that intake rates of deer, snowshoe hare, and grouse account for 80%, 10%, and 10% of the total intake of wild meat, respectively.</p> <p>The intake rates for traditional plants for the Aboriginal are based on information provided in Chan et al. 2011. Based on Chan et al. (2011), the site is located in Ecozone 3, which corresponds to the Montane Cordillera/Plateau. The mean grams of each traditional plant consumed per day by an Aboriginal in Ecozone (Chan et al. 2011) was combined with information from Richardson (1997) about the relative amounts of leafy vegetables consumed by each age group, to estimate overall intake of traditional plants for each age group. The information in Chan et al. (2011) was also used to determine that the intake of traditional plants is comprised of 80% berries and 20% forage (leafy plants).</p>	Section 10.4 Section 8.5 Part C

Table 13.5-1. Overlap of Project Footprint¹ with Traditional Territories

Aboriginal Group	Surface Area of Traditional Territory (ha)	Overlap of the Project with the Traditional Territory (ha)	% of Traditional Territory Overlapped by the Project (%)
Stk'emlupsemc te Secwépemc Nation ²	1,252,635	1,705	0.14%
Secwépemc Nation ³ (WP/CIB)	14,071,275	1,705	0.01%
Nlaka'pamux Nation ⁴ (LNIB and AIB)	3,456,145	1,705	0.05%

¹ Project Footprint occupies 1,705 ha.

² Source for Stk'emlupsemc te Secwépemc: <http://stkemlups.ca/about/>.

³ Source for Secwépemc Traditional Territory: <http://www.shuswapband.net/culture-tradition-and-heritage/shuswap-lands>.

⁴ Source for Nlaka'pamux: http://maps.lnib.net/#/map/lnib_territory_overview.

13.6.1.1 Historic Practice of Aboriginal Rights

Seasonal Round

The SSN historically occupied and moved throughout certain parts of the traditional territory seasonally (Ignace, 1995), referred to as the “seasonal round”. Their unique knowledge about the lands and resources includes an understanding of how plants and animals behaved and how that behaviour changed depending on the season and the location (National Energy Board: Oral Presentation from Chief Ignace, 2014). The CHS (2014) identifies five major seasons as part of the seasonal round: early spring (snow melting), mid-to-late spring (root gathering), summer (berry and high elevation root and medicinal plant gathering), late summer to early fall (salmon season) and mid to late fall (hunting season). According to Chief Ignace, the October/November months are where people and animals entered into their winter homes/dens and this time was also associated with various activities. During the crossover moon in December, people lived on stored provisions from trapping and hunting and would tell stories (conduct stseptekwll). During this time, there would also be celebrations to signal the end of winter and the gradual shift to longer, warmer days (National Energy Board: Oral Presentation from Chief Ignace, 2014).

The resources found in the SSN traditional territory were to be used equally by all Secwépemc and provided necessary sustenance (National Energy Board: Oral Presentation from Chief Ignace, 2014). Chief Ignace notes the grasslands contain a high level of biodiversity for different plants, medicines, foods, and animal species.

Historically, SSN peoples modified and maintained streams to maximize the fish yield (Ignace 2014). This was accomplished by ensuring the streams and lake openings were clear of debris for fish to travel. They would also plant green willow trees on either side of streams, as tree roots would clean the water.

The Project site and surrounding areas historically provided a variety of plant foods and medicines and given it is within close proximity to the confluence of the North and South Thompson rivers and Kamloops Lake, it was a desirable harvesting location. Plant harvesting that included seeds, nuts, and berries was a critical source of vitamins and nutrients for the Secwépemc peoples. Traditional plant foods ranged from seeds, nuts and berries to roots, green shoots and leaves, inner bark or cambium of some trees, mushrooms, lichens, and various types of casual foods, flavourings, and

beverage plants (Ignace 2014). Plant products were also used for medicines, technology, and for ceremonial purposes.

A number of specific locations played an important role for the SSN. These include the Aboriginal trail, Cherry Creek, Jacko Lake area (Pípsell), Goose Lake, and the Hunting Blind. Further details on these are provided in Chapter 12.

13.6.1.2 *Present Day Practice of Aboriginal Interests*

Currently, SSN people continue to practice Aboriginal interests within the traditional territory including hunting, trapping, fishing, plant gathering, as well as conducting other uses (such as cultural and spiritual practices, use of trails, navigation on waterbodies). These activities are an important part of the seasonal round. However, Chief Ignace notes that current developments (road construction, ranching, mining, and pipelines) in the Jacko Lake area have had negative effects on the area.

Hunting is still widely practiced. During interviews with SSN knowledge holders and elders, Sugarloaf Ranch was noted to be an important hunting area for over seven SSN members (Ignace 2014). Moose, deer, ducks, and geese were harvested in the Sugarloaf Ranch area. Interviewees also noted current deer hunting in the Schiedam Flats area – located approximately 23 kilometres (km) north-east of the Project site, near Paul Lake (see Chapter 12 for more information). Other popular hunting areas noted by interviewees include Jacko Lake, Cherry Creek, Chuwels Lake, Chuwels Mountain, Lac Le Jeune, Inks Lake and the Knutsford area. Greenstone Mountain is an area used for hunting too, particularly in the winter. The extent of recent hunting practices in the areas surrounding the Project site is likely limited because the landscape has been altered from ranching, urbanization, and mining activities. Interviewees noted frustrations with accessing the Jacko Lake area due to fencing and private property (Ignace 2014). A ranch owner within the area noted that there have been some requests by Aboriginal Groups to use the ranch lands for hunting (Landowners, pers. comm., 2015). However, SSN members noted that hunting still occurs around Jacko Lake, Peterson Creek, and Goose Lake, particularly for moose and deer. With respect to trapping, Ignace (2014) identifies late July to mid-August as being important times to harvest marmots in the subalpine and alpine areas of the high mountains, which for the SSN include the areas around Mt. Lolo, Mt. Paul and Tod Mountain (Skwel^owelt), and Duck's Range to the east. No trapping activity by the SSN was identified in the areas surrounding the Project.

The area surrounding the Project provided and continues to provide ample opportunities for fishing various species including the Thompson River and Kamloops Lake. SSN members interviewed by Ignace (2014) described fishing in Jacko Lake for large size rainbow trout (over 30 centimetres [cm]), typically fishing along the inflow creek in the spring. Members that were interviewed mentioned on-going fishing and fly fishing activities today in Jacko Lake using boats. SSN members also fished Jacko Lake using a fishing rod as recently as 2008. The interviewee noted traditional fishing methods are not allowed at Jacko Lake. Jacko Creek and Peterson Creek are noted to be a valued trout fishery for the SSN. A recent report prepared on behalf of SSN indicates that coho salmon are also found at the mouth of Peterson Creek, where Peterson Creek converges with the South Thompson River although it is unclear if members are fishing there (Pottinger Gaherty Environmental Consultants, on behalf of SSN, 2015). SSN continue to fish in the Thompson River. For example, in 2004, SSN and

Bonaparte First Nation deployed a fishwheel in the Thompson River mainstem near the outflow of the Deadman River (Tk'emlúps Website, 2014). A fishwheel is a device used to catch fish and operates similar to a water-powered mill wheel.

Plant harvesting occurs at different times of the year. In mid to late May and June, the cambium of Ponderosa Pine and Lodgepole Pine is harvested (Ignace 2014; Turner 1997). In early to midsummer, different root plants may be harvested (balsamroot, nodding onion, biscuit-root, bitterroot, mariposa lily, glacier lily, chocolate lily, spring beauty) at higher elevations as the snow melted in these altitudes. Early to late summer, berries (soapberries, Saskatoon berries, strawberries, huckleberries, blueberries, cranberries) are picked at higher areas on plateaus. Important gathering areas included the slopes east of Mount Peter, Pencentén (Pinantan), the Tranquille area, Mount Lolo and Mount Tod, the Jacko Lake (Pípsell) area, and the meadows above the north shore of Kamloops Lake (Ignace 2014). When roots were dug out, the corms were placed back in the ground so they could be harvested the following year (National Energy Board: Oral Presentation from Chief Ignace, 2014).

Based on an ethnobotanical inventory by the SSN research team, Ignace (2014) states that 127 culturally important species are still present in the Project area. Historically, 90 of these species had medicinal uses, 45 were used as food, 47 were used technologically, six had spiritual value, and seven were used in ceremonies (Ignace 2014). This area has seen a large amount of introduced plants, including noxious weed species. Ignace (2014) notes that the areas near roadways, the mining pits and waste deposit areas, and the boat launch site at Jacko Lake, have been overtaken by introduced plant species, including noxious weeds. Interviewees noted that the Jacko Lake area is a desirable plant gathering location, however access is restricted due to locked gates, private property, and fences. Ignace (2014) notes that current plant harvesting is limited because SSN people have been largely excluded from this area. The Secwépemc are estimated to use over 100 grassland plants for food, medicine, and technological purposes; however, a number of the species in grasslands are considered endangered or threatened as a result of development (city infrastructure, mining, road construction, pipelines) and other activity (ranching, cattle, horse grazing; National Energy Board: Oral Presentation from Chief Ignace, 2014). A landowner noted that Aboriginal people have been observed gathering mushrooms and Saskatoon berries along public roads in the area (Landowners, pers. comm., 2015). The grasslands surrounding Jacko Lake are noted to be important migration resting places for songbirds and sandhill cranes, breeding grounds for golden and bald eagles, great grey and pygmy owls, and red-tailed and Swainson's hawks as well as important habitat for sharp-tailed grouse (Pottinger Gaherty Environmental Consultants, on behalf of SSN, 2015).

The CHS, consultation with SSN, and Chief Ronald Ignace's testimony at the Trans Mountain Pipeline National Energy Board Hearing identify sacred, spiritual and ceremonial practices. These include Jacko Lake and its surroundings, Goose Lake, and the Hunting Blind Complex.

Jacko Lake and its Surroundings (Peterson Creek and Jacko Creek)

The CHS chronicles many traditional activities that occurred in the Jacko Lake area such as root gathering, fishing and hunting in and around the lake (SSN, pers. comm., 2014). The oral history surrounding this area is said to be connected to the epistemological underpinning for Secwépemc *stsq'ey* (which means indigenous law) that explains the reciprocal and mutually accountable relationships between human beings and the environment (e.g., fish, birds, animals, the atmosphere

and the water cycle). This relationship is illustrated in a story called *The Trout Children*, part of the oral tradition of this area. The story explains the relations between humans and the trout people who are said to live in and under the lake. It explains how water-beings (*xqelmecwetkwe*) active underneath the lake are also connected to Kamloops Lake, Adams Lake, Shuswap Lake, and the North Thompson River. The story is also connected to rituals and ceremonies by way of a song called *Chickadee* (*tsqiqse7*) which is also connected to Pípsell. The story was also connected to a Prayer Tree (which no longer exists) eastern entrance of the mine site, north of the crossing of Peterson Creek just off Long Lake Road. The tree, since destroyed by development of a road decades ago, served as a medium for human communication with the sky (atmosphere) world. It was important to communicate and show respect for the land and creatures in this area. The SSN identify this area as having spiritual, cultural, and ceremonial values through oral traditions, an offering tree, spiritual connections and prayers with water beings. Jacko Lake was also one of several locations in Secwépemc traditional territory used to perform Etsxem or ritual fasting and vision quests. Ignace (2014) notes the presence of culturally modified trees in the Jacko Lake area that support stories outlining the special significance of the area to SSN people. Some cultural and ceremonial uses still occur today; however the Secwépemc people, including the SSN, have been largely alienated from these lands from various agricultural and industrial activities since the 1860s.

According to Chief Ignace there are three to six sharp-tailed grouse “dance houses” in the vicinity of Jacko Lake (National Energy Board: Oral Presentation from Chief Ignace, 2014). Ignace (2014) notes the presence of culturally modified trees in the Jacko Lake area to support the stories claiming the area had special value to SSN people.

Goose Lake

Goose Lake is noted to be an area of cultural importance to the SSN, although additional detail was unavailable at the time of writing (AIR Comments from SSN, 2014).

Hunting Blind Complex

A Hunting Blind (*cyegmíñten ne cpixmeñten*) is translated in the Secwépemc language as “piled up stones in a semi-circle at a human-made hunting ground”. A Hunting Blind was identified in the vicinity of Jacko Lake and it features rocks piled in a circle above and below a gully. SSN elders and knowledge holders suggested that the Hunting Blind was a place where hunters would lay in wait for large game such as deer, elk, and caribou. According to the SSN, other hunters would spread out in a line across the mouth of the valley below the location of the blind and would walk together up the gully towards the blind. The game would move up the ever narrowing valley ahead of the hunters. The hunters in the blind would use spears or arrows to kill the game as it approached. This method facilitated sustainable and efficient harvesting large numbers of animals, particularly elk (SSN, pers. comm., 2014). During the Project’s Archaeological Impact Assessment (AIA) a number of petroform features were identified, which is consistent with a Hunting Blind. There are other petroform features and trees in the area that SSN believe to be markers. The Hunting Blind includes stones that could have been used for seats, which the SSN noted may have been used during ceremonies. While the Hunting Blind historically facilitated efficient game harvesting, it also provided opportunities to teach about the SSN culture, including the important roles the seasonal round, ceremonies, and prayers play. For the SSN, culture is inextricably connected to the

environment, including the activities ancestors carried out on the land. Therefore, the Hunting Blind represents an area of spiritual value and connectedness for the SSN. It also poses an important area for future use, to teach the youth about the traditional hunting methods of SSN ancestors. The Hunting Blind is also located near key waterbodies (Jacko Lake and Peterson Creek) and valuable grasslands and game trails. During a meeting with the SSN in fall 2014, the Hunting Blind and the area around it was described as an important site with cultural, historical, and spiritual value. Ignace (2014) notes that if the Hunting Blind is removed, a highly significant, unique, and irreplaceable cultural resource, ideal as an aid to demonstrate and teach Stk'emlups people about their culture and practices, and their long-term, intimate connection to the land and natural world will be lost forever.

13.6.1.3 *Future Practice of Aboriginal Interests*

Consultation is on-going between KAM and the SSN, and may yield additional information on the reasonably anticipated future use of lands and resources that may potentially be affected by the Project. Should SSN provide additional information to KAM, it will be considered and incorporated in the Application, as appropriate, and in project planning. Given the lack of information on future uses, the assessment assumes that the practice of Aboriginal interest in the future will continue at the current level.

13.6.2 **Asserted SSN Aboriginal Interests**

KAM understands the importance of collecting and considering information on potentially affected asserted Aboriginal interests.

With this in mind, KAM implemented the following approaches to collecting information on asserted interests with the SSN:

- funding TK/TLU studies (KAM provided funding to SSN for the CHS and Preliminary Mitigation Report;
- multiple site tours with key SSN representatives including elders and knowledge holders;
- over 60 meetings with SSN leadership;
- four SSN community meetings; and
- literature reviews and secondary data collection (oral testimonies for the Kinder Morgan Pipeline Expansion Project).

The information obtained from the CHS and secondary sources has been disseminated regularly to the scientists and researchers involved in development of baseline studies and the effects assessments. Table 13.6-1 presents a summary of SSN concerns and interests raised in relation to the Project (until July 31, 2015). Key comments provided by SSN in communications after this date have also been incorporated, as appropriate.

Table 13.6-1. Summary of Stk’emlupsemc te Secwépemc Nation Concerns and Interests Raised in Relation to the Project until July 31, 2015

Asserted Right	Concern	Manner Raised	Valued Component Affected
Fishing	Potential effects of blasting vibration on fish and fish habitat in Jacko Lake.	Consultation	Fish habitat and fish populations Noise and vibration Current use of lands and resources for traditional purposes
	Changes in access to fishing locations in Jacko Lake.	AIR/EIS Guidelines comments Consultation	Fish habitat and fish populations Current use of lands and resources for traditional purposes
	Changes in availability of rainbow trout in Jacko Lake.	Cultural Heritage Study	Fish habitat and fish populations Current use of lands and resources for traditional purposes
	Potential effects to migrating and resident fish species in Kamloops Lake.	Consultation	Fish habitat and fish populations Current use of lands and resources for traditional purposes
	Potential effects on the fishery and aquatic ecosystem in the in the Thompson River as a result of the Project and related cumulative effects.	Mitigation Report	Fish habitat and fish populations Surface water quality Current use of lands and resources for traditional purposes
Hunting	Potential effects to moose and deer hunting around Jacko Lake, Goose Lake, and Peterson Creek.	Consultation	Mammals Current use of lands and resources for traditional purposes
	Effects of noise on wildlife.	Consultation Mitigation Report	Mammals Noise and vibration Current use of lands and resources for traditional purposes
	Effects of artificial light on wildlife.	Consultation Mitigation Report	Mammals Current use of lands and resources for traditional purposes
	Effects on non-migratory game birds habitat, in particular, Blue- and Red-listed species such as the sharp-tailed grouse.	Cultural Heritage Study Mitigation Report Consultation AIR/EIS Guidelines comments	Non-migratory gamebirds Current use of lands and resources for traditional purposes
	Displacement of ungulates (from disruption in movement or migration patterns) and changes to wildlife habitat.	Mitigation Report Consultation	Mammals Current use of lands and resources for traditional purposes
	Potential effects on the American badger and other small mammals in the Project vicinity such as porcupine and skunk, including effects on the habitats these species depend on.	Mitigation Report	Mammals Grasslands Current use of lands and resources for traditional purposes

(continued)

Table 13.6-1. Summary of Stk’emlupsemc te Secwépemc Nation Concerns and Interests Raised in Relation to the Project until July 31, 2015 (completed)

Asserted Right	Concern	Manner Raised	Valued Component Affected
Hunting (<i>cont’d</i>)	Changes to biodiversity and the effects it will have on wildlife.	Consultation Plan comments	Mammals Rare and sensitive ecological communities Rare plants Grasslands
	Change in access and use of preferred animal harvesting locations (e.g., Jacko Lake, Peterson Creek).	Mitigation Report	Current use of lands and resources for traditional purposes
Plant Gathering (food)	Destruction of grasslands which support plant biodiversity.	Mitigation Report Consultation	Grasslands Current use of lands and resources for traditional purposes
	Potential effects on berry, wild root vegetable, and other medicinal and food plant gathering sites (in the vicinity of the Project and around Jacko Lake).	Cultural Heritage Study Consultation	Current use of lands and resources for traditional purposes
	Effects on plants used for technological and ceremonial purposes (in the vicinity of the Project and especially around Jacko Lake).	Cultural Heritage Study Mitigation Report	Rare Plants Current use of lands and resources for traditional purposes
	Effects to minerals gathered for technological purposes.	Cultural Heritage Study Mitigation Report	n/a
Use of ceremonial/ cultural sites	Destruction of the Hunting Blind Complex and the historical, cultural and instructional values associated with it.	Cultural Heritage Report Mitigation Report AIR/EIS Guidelines comments Consultation	Archaeological sites Current land and resource use for traditional purposes
	Potential effects on Goose Lake which has cultural value.	AIR/EIS Guidelines comments Consultation	Current use of lands and resources for traditional purposes
	Potential effects on (including changes to the integrity of) the Jacko Lake area (“Pípsell”) which is considered an important cultural landscape and place with spiritual value.	Consultation AIR/EIS Guidelines comments	Heritage sites Current use of lands and resources for traditional purposes
	Potential effects to historic campgrounds (Cherry Creek).	Cultural Heritage Report	Current use of lands and resources for traditional purposes

13.6.3 Asserted SSN Aboriginal Title

KAM is aware that the BC EAO and the CEA Agency have conducted a number of assessments of the strength of SSN's claimed Aboriginal rights and title in the vicinity of the Project (KAM was not directly involved in the assessments.) In May 2015, the BC EAO provided SSN with a "revised assessment" of the strength of claim based on information available at that time to the Province and current case law—including consideration of the June 2014 Tsilhqot'in decision of the Supreme Court of Canada. In that revised assessment, the Province expressed the view that the available information "supports there is a strong prima facie claim to Aboriginal title within the proposed Project site by the SSN." Further, the Province stated that it "continues to be of the view that there is a strong prima facie claim to Aboriginal rights to hunting, fishing, gathering, spiritual use and trapping by the SSN in the proposed Project area."

It is KAM's understanding that SSN claim their Aboriginal title exists irrespective of whether the land in question is held by the Crown or currently under private (fee simple) ownership. Table 13.6-2 describes the various assertions made by SSN in respect of Aboriginal title in the Project area. The comments were compiled from consultation activities conducted until July 31, 2015, including meetings and correspondence with KAM (e.g., letters, e-mails). Any key comments on asserted title received after July 31, 2015 has also been incorporated as appropriate. A detailed summary of communications with SSN is included in Appendix 15-A, Summary of Communications with Aboriginal Groups.

Table 13.6-2. Summary of SSN Comments Regarding Title in the Study Area

Issue	Manner Raised	Date
A full Cultural Heritage Study is required to determine section 35 strength of claim on mining project. If the process is not followed SSN will initiate a court challenge.	Meeting	08/18/2011
The Consultation Plan was devised without correct assessment of rights and title.	Meeting	02/04/2015
SSN has Aboriginal title in their territory. People have been on this land for 1,000 years.	Meeting	10/03/2011
Aboriginal title has not been resolved, cannot move further ahead. Rights and title should not be dichotomized.	Meeting	02/04/2015
Spirit and intent on SSN title and rights sets the foundation of relationship with government or corporate entities. That is the law of the land. SSN will be telling the story of the past, present and future. It is like a story that needs to be told accurately about what has been, what is, and what might be. The more accurate the story, the better the SSN's interests rights and title will be represented in the EA.	Meeting	12/15/2014

(continued)

Table 13.6-2. Summary of SSN Comments Regarding Title in the Study Area (continued)

Issue	Manner Raised	Date
<p>KAM's activity adversely impacts Aboriginal rights and infringes on Aboriginal title. The 1997 Supreme Court of Canada decision in <i>Delgamuukw/Gisday'wa v. The Queen</i> case clarified the law respecting the rights of Aboriginal people in British Columbia, which includes Skeetchestn and Tk'emlups Indian Bands. The Supreme Court ruling included the following legal principles: (a) Aboriginal title is not extinguished and the Province cannot and never could extinguish Aboriginal title or rights. (b) Aboriginal title is protected by section 35 of the Constitution Act, 1982. (c) Aboriginal title is a property interest. (d) Governments must justify any infringements of Aboriginal title. (e) Lands held pursuant to Aboriginal title have an inescapable economic component. The basis for these rights also stated in 1910 our Chiefs agreed to share our Traditional Territory equally with the settlers.</p>	Letter	03/15/2013
<p>SSN title is a very important part of the economy. The CHS study informs this. There is a need to discuss the economic value with respect to the SSN. More time is also needed to go through this process and conduct adequate discussion.</p>	Meeting	12/15/2014
<p>Aboriginal rights and title must be addressed by both KAM and by government. KAM must accommodate SSN for infringement of rights and title if the Project proceeds.</p>	Letter	04/05/2012
<p>The Crown recognizes SSN's strength of claim on the proposed project site. The Stk'emlupsemc te Secwépemc Qelmucw have government to government agreements with the Province of British Columbia called on the Mining and Minerals Agreement, Revenue Sharing Agreements and more recently entered into negotiations on a Reconciliation Agreement with BC. The Stk'emlupsemc te Secwépemc have a responsibility to the Secwépemc Qelmucw to protect those interests for future generations.</p>	Letter	05/23/2012
<p>SSN's position that KAM is in violation of the exploration agreement (that could lead to SSN filing an infringement case). The project will infringe on SSN's cultural and traditional uses. SSN expects compensation for this infringement and will use the funds for preservation of values associated with the Hunting Blind and associated impacts. Meaningful discussions for a more comprehensive agreement need to occur.</p>	Letter	11/17/2011
<p>The Crown has delegated the responsibility and authority for discussion to KAM and therefore there is a need to have clarity on rights and title before this assessment can be completed by KAM.</p>	Meeting	12/15/2014
<p>While the Crown may have delegated certain aspects of consultation to KAM, the Crown has not delegated the authority to KAM to consult or negotiate on rights and title on their behalf. This is a Government to Government discussion.</p>	Meeting	12/15/2014

(continued)

Table 13.6-2. Summary of SSN Comments Regarding Title in the Study Area (completed)

Issue	Manner Raised	Date
The area of the proposed Notice of Work has cultural and spiritual significance to SSN. This whole area is known as Kwłalstetkwe and can be characterized as a "spiritual complex" where SSN members traditionally interact with the spirit world and to pray. It is this area that connects the Water People in Jacko Lake to other lakes and transformation sites within the complex which also includes prayer trees and alters, seasonal rounds and Hunting Blinds.	Letter	04/23/2014
The Jacko Lake and surrounding area (including Jacko Lake, Goose Lake, Peterson Creek, and the Hunting Blind Complex) is important to SSN from an Aboriginal rights and title perspective. The project should not affect plant communities and wildlife such that there is an effect on rights and title in the area. Potential effects to Aboriginal rights and title on taking water from Kamloops like should be assessed.	Letter	12/18/2014
SSN declares Aboriginal title at Pípsell (Jacko Lake and surrounding area), an area currently connected to the proposed KAM Copper-Gold Project near Kamloops, BC, located within SSN Territory. Pípsell (Jacko Lake and its surroundings) is a cultural keystone area with significant spiritual and historical importance to the SSN. The area is connected by the epic oral history titled in English The Trout Children stemming from Jacko Lake and its surrounding which explains the deeds of Secwépemc people on the lands and to the land as inseparably connected. <i>Pípsell</i> and its Secwépemc <i>stsq'ey'</i> (indigenous laws) provide the narrative foundation for ownership and stewardship of Secwépemc lands and resources. The Secwépemc law concept of <i>x7ensq't</i> (the land and sky turning on you) is directly connected to this area because it is imbued with spiritual power due to past events and where we have a special responsibility to safeguard the respectful relationship with the land, lest the land and sky turn on you.	Press Release	06/17/2015
Works around Jacko Lake impact SSN's Aboriginal practices, traditions, customs and interests in Jacko Lake.	E-mail	03/21/2014
The loss of traditional places due to change in access result in a broken connection. There are direct and indirect impacts. The tangible effects such as to a species and the loss of sustenance, and the intangible effects such as Jacko Lake and the stories.	Meeting	02/04/2015
Works in and around Peterson Creek (Jacko Lake and surrounding area) will impact SSN's Aboriginal practices, traditions, customs and interests.	E-mail	03/21/2014
Joint Venture with a SSN business cannot be construed as consultation or accommodation of Aboriginal rights or title.	E-mail	03/21/2014
With respect to occupation, SSN can demonstrate they have lived there.	Meeting	02/04/2015
The area has an important cultural history and meaning to SSN that is not replicable elsewhere. Access to Jacko Lake and the fishery is an important part of SSN's tradition. The project effects on fish are un-mitigatable. There should not be a loss of access and/or limiting of access for SSN.	Meeting	04/21/2015

13.6.4 SSN Interests Effects Assessment and Mitigation

This section discusses how the practice of SSN interests could potentially be affected by the Project in each of its phases: Construction, Operation, Decommissioning and Closure, and Post-Closure. The analysis considers both potential direct and indirect effects of the Project and identifies interrelations between the VCs and the Aboriginal Interests. This section also describes the measures that will be used to avoid, mitigate or otherwise accommodate potential effects. Potential effects related to Pípsell such as Jacko Lake and the Hunting Blind Complex will be explicitly discussed where appropriate.

The potential effects considered for the assessment are the ones related to activities that could affect the SSN practice of interests. Land use changes for the development of Project infrastructure together with sensory disturbances such as dust, noise, and visual effects will be considered together with any changes to the quality of the plants or animals that are harvested for human consumption.

The Project has the potential to generate effects on the practice of Aboriginal interests from the onset of the Construction phase through Construction, Operation, Decommissioning and Closure, and Post-Closure. The Project could generate habitat losses associated with the clearing of vegetation required for the Construction of Project-related infrastructure. The availability of plants and wildlife in the areas where suitable habitats are lost will change during the Construction phase and this effect will persist during the Operation phase while mine facilities expand to accommodate the waste rock and tailings resulting from mining and ore processing. The losses in availability of resources will be mitigated by re-vegetation activities that will be implemented during the Operation phase (i.e., progressive re-vegetation) and most importantly during the Decommissioning and Closure phase when Project activities are focused on restoring the land to an acceptable long-term use objective. There is the potential that during the Post-Closure phase some areas of the Project could not be restored to a condition that would be suitable for activities such as fishing, hunting or trapping or other uses; therefore the potential for losses in availability of resources could extend during the Post-Closure phase and become permanent.

Because of the need to protect the health and safety of the public and workers, access to the Project will be restricted during the Construction and Operation phase. As closure measures are implemented and areas of the Project are rehabilitated, access could be allowed for activities such as plant harvesting or hunting, provided that it is safe and that closure objectives are achieved.

Sensory disturbances such as noise or dust and visual effects have the potential to affect activities such as fishing, hunting, plant harvesting and other uses of the land and resources. Noise and dust would occur mainly during the Construction and Operation phases of the Project but would be greatly diminished during the Decommissioning and Closure and Post-Closure phase. Visual effects would persist during the Decommissioning and Closure and Post-Closure phase because some of the Project components such as mine rock storage facilities and the Tailings Storage Facility (TSF) will remain as permanent elements of the landscape but not in the same state as during operations because the areas will be reclaimed and re-vegetated.

The quality of the plants and animals that Aboriginal Groups harvest has the potential to be affected due to exposure to contaminants that would be generated by the Project during the Construction

and Operation phases. The pathways through which contaminants could affect plants, animals, and ultimately humans include ingestion or inhalation. These potential effects will be considered in the assessment, which will be informed by the human and ecological risk assessment done for the Project.

CULRTP (Section 8.5) provides a detailed summary of potential effects on Aboriginal land uses, including key interactions and relevant mitigation. With respect to potential contamination of the resources harvested for consumption by Aboriginal Groups, the risk to human health associated with the ingestion of country foods, including fish, animals, and plants, has been assessed under the human health VC (Section 10.4). Mitigation measures specific to human health were not been recommended. Mitigation measures to control air and dust emissions outlined in the air quality effects assessment (Section 10.1) and mitigation measures to control surface water and groundwater discharges outlined in the water quality effects assessment (Section 6.3) will reduce Project emissions to levels that are protective of human health.

13.6.4.1 *Summary of Residual Effects on SSN Interests*

This section describes the residual effects on SSN interests. It focuses on describing residual effects on the practice of Aboriginal interests such as fishing, hunting and trapping, fishing, gathering plants, and ceremonial practices. It later describes the other potential effects that could occur which were raised by the SSN as a concern including changes in the ability to protect Jacko Lake, impacts to ancestral grave sites, effects on cultural heritage and effects on the spiritual significance of Jacko Lake. A discussion regarding effects on SSN asserted title is also included, focusing on key components related to title such as occupancy of the land, governance, and economic benefit from the land.

As per the AIR/EIS Guidelines, for each Aboriginal interest, the following assessment will also describe:

- effects to the ability of SSN to **harvest** from geographic areas;
- effects (including loss or limitation) to SSN **access** to areas;
- effects to the **seasonal round**; and
- effects to plants, fish and wildlife used by SSN.

Practice of Fishing Interests

The following section describes how the Construction, Operation, and Decommissioning and Closure and Post-Closure phases of the Project will interact with the practice of fishing interests.

Impacts to the Aboriginal Fishery at Jacko Lake

Construction and Operation of the Project will result in the removal of the northeast arm of Jacko Lake which comprises 6% of the total area of Jacko Lake at full pool. The results from the fish habitat and populations VC did not predict effects on the availability of rainbow trout for the SSN fishery in Jacko Lake. Resiliency of the rainbow trout population in Jacko Lake to the imposed stress of direct habitat loss is characterized as high, since the lake was presumably able to maintain the larger numbers of stocked fish within the smaller area between 1954 and 1990 compared to the current area.

Water levels in Jacko Lake have actively been managed historically through dam raises, with the last raise occurring in 1990. It should be noted that the northeast arm of Jacko Lake, which will be removed by the Project, was created by artificially raising the water level of the lake. The fish habitat and populations VC also predicts no effects or loss of productivity in Jacko Lake as a result of ground vibrations generated by blasting. During Operation, fish habitat in the northeast arm of Jacko Lake will be lost. This portion of the Lake will no longer be available to the SSN for the practice of fishing. In summary, no effects on the Aboriginal trout fishery in Jacko Lake are anticipated.

While Jacko Lake is a popular recreational fishing spot it is unlikely that SSN obtain a substantial portion of their fish intake from Jacko Lake or Peterson Creek. If SSN were to obtain a substantial portion of their fish intake from the general Kamloops area, it is more likely they would obtain it from the Thompson River, where the principal target species is salmon and devices such as nets and fishing wheels are permitted. This is consistent with secondary research that indicates the SSN have a fishwheel deployed at the Thompson River mainstem near the outflow of the Deadman River (Tk'emlúps Website, 2014). The Human Health VC (Section 10.4) assumes Aboriginal Groups (including SSN) obtain 10% of their total fish intake from Jacko Lake.

With respect to access, safety zones will be enforced around the open pit during blasting periods in the Construction and Operation phases and will result in restricted access to some portions of Jacko Lake. Blasting is expected to be undertaken once per day around 12:00 pm (this is the time targeted however it may happen anytime during daylight hours). This would create a window of approximately two hours during which SSN members would be unable to engage in activities within the specified blasting buffer area. Time is required before the blast to clear the buffer area of people and after the blast to ensure that the blasting has been completed satisfactorily and that there are no hazards to people. According to the current mine plan, it is expected that during the first 10 years of Operation this blasting buffer could extend across the eastern half of the lake. KAM will have appropriate signage indicating blasting times and will communicate with SSN regarding when blasting is likely to occur and demarcate those areas. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to Jacko Lake. However, KAM will facilitate access to Jacko Lake through construction of an alternative access road to Jacko Lake south of the proposed main access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to Jacko Lake. Project-related noise will be noticeable in the Jacko Lake area. The expected levels of noise at Jacko Lake during sheet piling activities taking place during the Construction phase will be the highest (representing the worst case scenario with respect to noise). The sheet piling activities are expected to be audible and will occur during the day, only for a period of approximately two months. The predicted level is over 75 dBA Leq daytime at the eastern part of the lake. The sheet piling activities will not “disallow” fishing in Jacko Lake; however, the enjoyment of the experience may be affected (subjective to the user for no longer than two months). However, noise will be noticeable during the remaining Construction phase once sheet piling activities are completed.

Jacko Creek

Given that only a very small portion of the Jacko Creek catchment is affected by Project activities, no effects are anticipated on the availability of fish in Jacko Creek. Jacko Creek will remain available to the SSN as the Project is not anticipated to affect access to this area for fishing.

Peterson Creek

Additional habitat losses are also possible within Peterson Creek downstream of the Project associated with flow reductions. Wetted area of 4.6 ha and riparian area of 9.7 ha will be lost where Peterson Creek is diverted around the north side of the open pit. However, fish habitat offsetting will aim to address the habitat loss. There will be flow reductions in the lower Peterson Creek catchment as a result of mining activities during the Construction and Operation phases, but this will be restored to similar to existing conditions during the Decommissioning and Closure phase. With respect to access, portions of Peterson Creek within the mine footprint will continue to be inaccessible for SSN harvesters.

The Fish Habitat Mitigation and Offsetting Plan (FHMOP) proposes measures to offset possible habitat losses in lower Peterson Creek. The measures proposed in the FHMOP will be the creation of fish habitat in Inks Lake, which is currently not fish bearing but is located in close proximity to Jacko Lake. With respect to Inks Lake, the SSN noted TLU activities do occur in this area, although further detail was unavailable at the time of writing. As a result of fish habitat compensation and offsetting, KAM proposes to develop fish habitat in Inks Lake (which is currently not fish bearing), to provide a greater availability of harvestable fish species for use by SSN. Inks Lake is within SSN's traditional territory and in close proximity to Jacko Lake and its surroundings (Pípsell).

In total, the anticipated habitat losses identified as unavoidable serious harm to fish total over 8 ha for the Project. However, after mitigation and compensation measures, it is expected that there will be gains in fish habitat, as a result of offsetting measures mainly around Inks Lake. The Fish Habitat Mitigation and Offsetting Plan identifies that a net fish habitat gain will be achieved within SSN's traditional territory. With the proposed offsetting ratios (habitat loss: habitat gain) and the similarity of the offsetting measures with the historical and on-going mitigation and management measures in Jacko Lake (fish stocking, installation of outlet dams to raise the water level and increase water storage) the effectiveness of the offsetting plan to address serious harm to fish associated with direct habitat loss in Jacko Lake and Peterson Creek is assumed to be high.

In addition to the mitigation proposed above, KAM proposes to establish a committee with the SSN to facilitate implementation of mitigation and monitoring. The committee will foster SSN's participation in understanding the effectiveness of the mitigation proposed on an on-going basis.

Seasonal Round

Jacko Lake is typically ice-free in mid-April, and provided an early trout run and the first fish protein of the seasonal round (Ignace 2014). The ability to continue spring fishing in Jacko Lake as part of the seasonal round, will continue with some modifications as outlined above. The practice of fishing rights during early spring will be subject to some restrictions in access created by the Project (i.e., blasting exclusion zone during blasting periods). However, to accommodate SSN's use of Jacko Lake as an early spring trout fishery, KAM will avoid construction activities within Jacko Lake during spring.

Similar sensorial disturbances experienced during other seasons will also occur during early spring, but dust generation would probably be lesser due to the snow melting and unpaved road surfaces being wetter than compared to other seasons. Sediment control measures will be of particular

importance during this season to deal with sediments transport generated by the snow melting which has the potential to affect water quality. Jacko Creek and Upper Peterson Creek will continue to be available for the seasonal round but middle Peterson Creek will not be available.

Late summer to early fall is called salmon season as part of the seasonal round. Juvenile Coho salmon have been observed in Peterson Creek at the confluence with the South Thompson River. Given that Coho salmon only use the confluence of Peterson Creek with South Thompson River, no effect as a result of the Project are anticipated on this species of fish, therefore late summer to early fall salmon harvesting of salmon will not be affected by the Project.

Summary

In summary, the practice of fishing interests is not predicted to change substantially in the majority of the areas identified for fishing in areas surrounding the Project. The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already affected by past projects and activities) of the overall Peterson Creek catchment, and will not impede fishing in other areas of the catchment (i.e., upper portions of Peterson Creek including Jacko Creek – identified as a fishing site) or in Lower Peterson Creek. A compensation and offsetting plan will be implemented that proposes to create fish availability and habitat in Inks Lake (within the SSN traditional territory). Access to Jacko Lake will be maintained similar to current conditions. To accommodate SSN's concerns about effects to Jacko Lake, KAM proposes to work with the SSN to identify potential candidate options for habitat compensation and offsetting options within the traditional territory. KAM will also support the SSN in stewardship of water and environmental quality through involvement in on-going review of existing water quality/quantity programs and plans.

Alternative Areas in the Traditional Territory to Practice Fishing Interests

The Peterson Creek catchment area, including the areas where the Project is proposed, comprise a relatively small proportion of SSN's traditional territory (0.14%). The Project will not affect SSN's ability to practice present and future fishing interests in other parts of the traditional territory including Jacko Creek, the North, South and Main stem of the Thompson River, Kamloops Lake, Edith Lake (within the Peterson Creek catchment), Deadman River, Lac Le Jeune, Tunkwa Lake, Leighton Lake, Paul Lake and Trapp Lake. Although there will be modifications, Jacko Lake will also still be available for the practice of fishing interests. KAM made attempts to solicit SSN perspectives on the alternative fishing areas identified by providing drafts of the Application (Part C and Section 8.5) in advance of submission, requesting meetings, and offering to provide presentations on the results of the assessment – as documented in Chapter 15 (Procedural Aspects of Aboriginal Consultation). At the time of writing, no comments were received with respect to the alternative fishing locations identified.

Characterization of the Effect on SSN Fishing Interests

Magnitude is minor since the effects are restricted to a relatively small area (north east arm of Jacko Lake and middle Peterson Creek catchment), and will not impede fishing in Jacko Lake or other areas of the catchment (i.e., lower Peterson Creek and upper portions of Peterson Creek including Jacko Creek – identified as fishing sites and part of Pípsell). Access to Jacko Lake will be maintained relatively similar to current conditions but some areas of Jacko Lake will be temporarily restricted while blasting is conducted.

Duration – The residual effect on fishing interests is anticipated to be far-future because of restricted access to portions of middle Peterson Creek will continue until Post-Closure.

Geographic extent of the residual effect on SSN fishing is local as it will only affect limited fishing sites within the Peterson Creek watershed and does not extend to other watersheds. The Peterson Creek catchment area, including the areas where the Project is proposed, comprises a relatively small proportion of SSN's traditional territory.

Frequency of the residual effect on fishing interests are predicted to be continuous during all phases of the Project.

Reversibility – The effect on the practice of fishing is expected to be partially reversed with the implementation of the fish habitat offsetting and when Project activities cease. The section of Peterson Creek that runs through the Mine Site (middle Peterson Creek from the discharge of Jacko Lake to the Peterson Creek diversion discharge) will no longer be available during Construction and Operation. This effect is considered reversible long term.

Context is considered high because of the importance of the Pípsell area to the SSN for the practice of fishing interests (past, current or future use). However, as discussed earlier other alternative fishing sites are available in the vicinity of the Project, near SSN reserves, and within the SSN traditional territory.

Based on the characterization provided above and in consideration of the results of the assessment of effects to fishing practices as well as the results of other related VCs, it is anticipated that the Project would have a minor effect on SSN's ability to practice fishing interests in their traditional territory.

Practice of Hunting and Trapping Interests

The following section describes how the Construction, Operation, and Decommissioning and Closure, and Post-Closure phases of the Project will interact with the practice of hunting and trapping interests.

With respect to trapping, an SSN member holds a registered trapline territory on Greenstone Mountain which is an area where moose, deer, cougars, bobcats, and lynx are harvested. This is a large trapline extending to the east of Greenstone Mountain where it is crossed by existing Projects and activities (e.g., New Afton Mine, Highway 5, ranching). The trapline will also be crossed by the freshwater pipeline that will bring water from Kamloops Lake to the Mine Site. This pipeline will follow, as possible, existing roads and disturbed areas as it will run in parallel to an existing pipeline currently operated by New Afton Mine. The registered trapline holder purchased the trapline two years ago and noted it had not been used yet. This is consistent with a review of harvest data from the BC Trappers Association and the Ministry of Forestry, Lands and Natural Resource Operation identifying the last harvest on this trapline in 2001. KAM will continue to consult with the registered trapline holder to identify future use of the trapline that could be affected. To date, no trapping activity has been identified by SSN within the Mine Site and Pípsell. There is a registered trapline overlapping with the mine site but it is not held by an SSN member.

Goose Lake, Peterson Creek and Jacko Lake were identified as locations for annual hunting practices by some SSN members, specifically for deer and moose. Goose Lake will be removed and will no longer be available for hunting although the practice of hunting interests in this area has already been affected due to private property and fencing. Access to hunting or trapping locations via Goose Lake Road will no longer be available for those portions of Goose Lake Road which will be closed (6.8 km loss out of 12.8 km total length). Access to Peterson Creek, within the footprint of the mine, will continue to be inaccessible for hunting or trapping. In the Post-Closure phase, KAM will support the permit system (which may include provisions to allow Aboriginal users access to ranch lands) for accessing ranch or grazing leases owned by KAM; however the open pit will remain unavailable for harvesting. KAM will maintain access to Jacko Lake through development of an alternative road and parking lot. The Hunting Blind Complex, historically used to practice hunting rights, will no longer be available as it will be removed.

With respect to effects on species targeted, the mammals VC identified:

- No residual effects were predicted for moose and no critical moose habitat within the mammals LSA.
- Not significant (moderate) effects on losses of habitat for American Badger and Mule Deer. There will be some losses of critical deer winter range (32.8 ha) out of 449 ha within the Project infrastructure footprint. In total there is over 1,600 ha of critical deer winter range present in the RSA. There will be a loss of 1,163 ha (out of 4,229 ha) of high and moderate suitable badger habitat will be lost in the Project Footprint. 13 out of the 26 identified badger dig sites identified in the Project infrastructure footprint will be lost.
- With respect to noise, Project Construction and Operation may affect 3-10% of suitable wildlife habitat (deer, American badger) within the mammals LSA. However, habituation to routine disturbances over the length of the Project may reduce noise effects. With mitigation, residual effects to direct mortality for wildlife are not anticipated to affect wildlife availability for SSN harvesters in the traditional territory.

The non-migratory gamebirds VC identified:

- A loss of 1,084 ha of suitable grouse growing habitat in the Project Infrastructure Footprint out of 3,578 ha of suitable grouse growing habitat. 401 ha of suitable grouse winter habitat will be lost in the LSA in the SSN traditional territory. Within the non-migratory gamebirds LSA, there is over 1,260 ha of suitable grouse winter habitat.

Sensory disturbances during Construction, Operation, and Decommissioning and Closure may affect the experience of harvesting interests. Project-related noise, including traffic related noise, will be noticeable in the Jacko Lake area but are expected to cease during the Post-Closure phase. Noise from sheet piling activities at Jacko Lake (as described) will occur during the day, only for a period of approximately two months.

There will be a moderate degree of visual effect during Construction, Operation, and Decommissioning and Closure from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill. It is anticipated that

the main Project components such as the mine rock storage facilities and the TSF will be noticeable from locations such as Jacko Lake and lower Peterson Creek. Visual disturbances will reduce to slight in some areas during the Post-Closure phase.

Seasonal Round

The SSN identified mid to late fall to the primary hunting season in the seasonal round. The ability to continue hunting in Goose Lake and Jacko Lake as part of the seasonal round, will change as described above. During the Operation phase, Project activities such as drilling, blasting, ore hauling and disposal of mine rock and tailings will be executed on a continuous basis, therefore there are not specific Project activities that would affect mid to late hunting practices in a different manner compared to other seasons. During Operation, the mine site will not be available for hunting practices, sensorial disturbances such as dust, noise and visual changes will occur. Mitigation through habitat rehabilitation will be completed during the Decommissioning and Closure phase, and once closure objective are achieved access to the mine site will be restored similar to current conditions, with the exception of the open pit area where access will not be restored.

Summary

In summary, the practice of hunting and trapping interests by SSN members within the traditional territory is not predicted to change substantially, however there will be some localized effects. Goose Lake and the Hunting Blind Complex (historically used for hunting) will no longer be available for the practice of hunting as both areas will be removed. The Project also affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already highly affected by past projects and activities). The vast majority of the land in the Project footprint and surrounding area is private (fee simple) land which may have alienated SSN members from practicing hunting/trapping interests. Harvesting areas in the mine site, including Goose Lake, will be unavailable to the SSN during Construction, Operation, and Decommissioning and Closure. The Project footprint limits access to hunting and trapping areas within a small portion (0.14%) of the SSN traditional territory, and does not limit the ability to practice this interest within other identified harvesting areas within the traditional territory. KAM remains committed to continued open dialogue with the SSN with respect to mitigation or accommodation strategies.

To mitigate effects on hunting and trapping rights, KAM proposes to support SSN in documenting past, present, and future land uses in the areas surrounding the Project and in the larger traditional territory. This will aim to facilitate SSN involvement in future reclamation activities and may include identification of habitat rehabilitation locations for key species such as the deer, moose, American Badger or sharp-tailed grouse. KAM also proposes to work with the SSN and investigate the need for future studies on biodiversity and animal population trends in the region to determine the possible role of the Project or other industrial activities in future conditions as they relate to harvested species.

Alternative Areas to Practice Hunting Interests

The Project comprises a relatively small proportion of SSN's traditional territory (0.14%). The Project will not affect SSN's ability to practice present and future hunting and trapping interests in other parts of the traditional territory including Greenstone Mountain, Chuwels Lake, Sugarloaf

Mountain, Schiedam Flatlands (Kum-gen-nat-kwa), Lac le Jeune, Six Mile, Tranquille Watersheds, Deadman's Creek Watershed, Andy Lake area, Heller Creek, Wood Creek, Burns Lake, Marshy Lake and Criss Creek Watershed (Ignace, Cultural Heritage Study - Final Report, 2014; SSN Affidavits 2011). KAM made attempts to solicit SSN perspectives on the alternative harvesting areas identified by providing drafts of the Application (Part C and Section 8.5) in advance of submission, requesting meetings, and offering to provide presentations on the results of the assessment- as documented in Chapter 15 (Procedural Aspects of Aboriginal Consultation). At the time of writing, no comments were received with respect to the alternative harvesting locations identified.

Characterization of the Effect on SSN Hunting Interests

Magnitude is considered moderate because of the loss of suitable habitat to grouse, badger, and deer within the Project footprint, as well as the loss of hunting areas surrounding Goose Lake and the Hunting Blind Complex (historically used for hunting), which are also sites associated with Pípsell. These changes would affect the ability of SSN members to practice hunting interests in these areas.

Duration is anticipated to be far-future because of access to hunting areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected by the Project comprises a small proportion of SSN's traditional territory (a maximum of 0.14%).

Frequency of the residual effect on SSN hunting interests are predicted to be continuous during all phases of the Project.

Reversibility - The effects on SSN hunting interests can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of hunting will be restricted permanently (0.02% of the SSN traditional territory).

Context is considered high because of the importance of the Pípsell area to the SSN for the practice of hunting interests (past, current or future use). However, as discussed earlier other alternative hunting sites are available in the vicinity of the Project, near SSN reserves, and within the SSN traditional territory.

Based on the characterization provided above and in consideration of the results of the assessment of effects to hunting as well as the results of relevant VCs, it is anticipated the Project will have a minor effect on SSN's ability to practice hunting interests in the larger traditional territory.

Practice of Plant Gathering Interests

The following section describes how the Construction, Operation, Decommissioning and Closure, and Post-Closure phases of the Project will interact with the practice of plant gathering interests.

SSN identified 125 traditional use plants as potentially occurring in the rare plants LSA. As reported in the rare plants VC, 114 of these traditional use plants were recorded as present within the LSA. The

potential changes in the availability of plant resources for SSN is quantified through spatial analysis of habitat losses. The rare plants study areas is used to describe losses of habitat, particularly in those portions where the losses will likely occur, primarily in the middle Peterson Creek catchment. Plants located in the upper and lower portions of the catchment should remain available as there are no losses of habitat anticipated in those areas. One hundred and four of the 184 (56%) occurrences of traditional use plants within the CULRTP LSA will be lost. Table 13.6-3 identifies the species of traditional use plants that will be lost as a result of overlap with the mine footprint.

Table 13.6-3. Losses of Traditional Use Plants within the Mine Footprint

Common Name	Number of Occurrences within Mine Footprint
Yarrow	20
Saskatoons	9
Kinnikinnick	0
Big sagebrush	14
Sedges	2
Red-osier Dogwood	5
Scouler's Hawkweed	0
Rocky Mountain Juniper	3
Lemonweed	10
Qweoewile / Large-fruited Desert-parsley	6
Ponderosa Pine	2
Douglas fir	22
Willows	4
Soapberries	4
Cattail	3
Total	104

Plant gathering areas in the mine site will be unavailable to the SSN during Construction, Operation, and Decommissioning and Closure. Access to plant gathering locations via Goose Lake Road will no longer be available for those portions of Goose Lake Road that will be closed. Access to Peterson Creek, within the footprint of the mine, will continue to be inaccessible for plant gathering as well as the areas of the proposed mine site. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to parts of Jacko Lake. However, KAM will facilitate access to Jacko Lake through construction of an alternative access road to Jacko Lake south of the proposed main access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to the areas surrounding Jacko Lake. Given the nature of Project activities and likely disturbances generated by the Construction and Operation phases, it is assumed that SSN will no longer be able to gather in the mine site footprint until Post-Closure, with the exception of the open pit which will not be accessible for safety reasons.

Seasonal Round

Mid-to-late spring is identified as root gathering time in the seasonal round. Jacko Lake was historically an important location for plants and root gathering often providing the first plant foods of the season. The Project affects a relatively small area (north east arm of Jacko Lake) and will not impede plant gathering around the south sides of Jacko Lake. Access to Jacko Lake will be maintained similar to current conditions.

During the Operation phase, Project activities such as drilling, blasting, ore hauling and disposal of mine rock and tailings will be executed on a continuous basis, therefore there are not specific Project activities that would affect mid-to-late spring practices in a different manner compared to other seasons. The mine site will not be available for root gathering practices, sensorial disturbances such as dust, noise and visual changes will occur. Mitigation through habitat rehabilitation will be implemented during the Decommissioning and Closure phase, and once closure objective are achieved access to the mine site will be restored similar to current conditions, with the exception of the open pit area where access will not be restored.

Summary

In summary, the practice of plant gathering by SSN members is not predicted to change substantially in the traditional territory, however there will be some effects particularly to plant gathering in areas of the Project footprint (representing a total of 0.14% of the SSN traditional territory). The ability to practice plant gathering interests within other identified harvesting areas in the will not be impeded in other areas. To accommodate these effects, KAM is committed to implementing a collaborative approach to reclamation with the SSN which may include providing funding for on-going reclamation research and incorporating SSN input into identification and siting of plants for re-vegetation. To mitigate and accommodate effects on the practice of plant gathering, KAM will provide the SSN with additional support to document past, present, and future land uses in the areas surrounding the Project and in the larger traditional territory. KAM will also provide support, as appropriate, to the SSN to participate in accessing, harvesting, and/or documenting plants or other resources of cultural value prior and during Project execution. KAM will work to identify and describe rare or valued plant communities within the Project footprint. As appropriate, KAM will work the SSN to collect seeds, plants, and soil samples to inform future reclamation and closure plans. KAM will also work with the SSN to investigate the need for future studies on biodiversity trends in the region to determine the possible role of the Project or other industrial activities in future conditions as they relate to harvested species.

Alternative Areas to Practice Plant Gathering Interests

The Project comprises a relatively small proportion of SSN's traditional territory (0.14%). The Project will not affect SSN's ability to practice present and future plant gathering interests in other parts of the traditional territory including other identified plant gathering locations around Greenstone Mountain, Lac le Jeune, Mount Peter, Mount Lolo, Broken Top Mountain, Mount Tod, Tranquille Watershed, Deadman's Creek Watershed, Heller Creek Watershed, Wood Creek, Andy Lake, Burns Lake, and Criss Creek Watershed (Ignace, Cultural Heritage Study - Final Report, 2014; SSN Affidavits 2011). KAM made attempts to solicit SSN perspectives on the alternative plant gathering areas identified by providing drafts of the Application (Part C and Section 8.5) in advance of submission, requesting

meetings, and offering to provide presentations on the results of the assessments – as documented in Chapter 15 (Procedural Aspects of Aboriginal Consultation). At the time of writing, no comments were received with respect to the alternative harvesting locations identified.

Characterization of the Effects on SSN Plant Gathering Interests

Magnitude is considered moderate because access to traditional plant gathering around portions of Goose Lake Road and middle Peterson Creek (part of the Pípsell area) will be restricted. Approximately 56% of the traditional use plants (occurrences) that are present in the Project footprint will be disturbed.

Duration is anticipated to be far-future because of access to plant gathering areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected comprises a relatively small proportion of SSN's traditional territory (a maximum of 0.14%).

Frequency of the residual effect on SSN gathering interests are predicted to be continuous during all phases of the Project.

Reversibility – The residual effects on SSN plant gathering interests can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of gathering will be restricted permanently.

Context is considered high because of the importance of the Pípsell area to the SSN for the practice of plant gathering interests (past, current or future use). However, as discussed earlier other alternative gathering sites are available in the vicinity of the Project, near the SSN reserves, where SSN can continue practicing gathering interests.

Based on the characterization provided above it is anticipated the Project will have a minor effect on SSN's ability to practice plant gathering interests in the traditional territory.

Practice of Ceremonial Use Interests

The following section describes how the Construction, Operation, Decommissioning and Closure, and Post-Closure phases of the Project will interact with the practice of ceremonial and cultural interests.

The SSN consider Jacko Lake and its surroundings (Jacko Creek, Goose Lake, Peterson Creek, and the Hunting Blind Complex) to be important geographic components forming Pípsell "[place of] small trout", which is noted as a cultural keystone place. The following section describes the effects on these areas for ceremonial or cultural practices. Given the effects will be different for each site, these are described individually.

The Hunting Blind Complex

The Hunting Blind Complex will no longer be available due to its location and will be removed during development of the open pit. Archaeological site EdRc-25 (noted to be a possible Hunting Blind in the archeological sites VC) will be directly affected by Project activities during the Construction phase. The SSN have noted that archaeological site EdRc-25 is not the same as the Hunting Blind Complex which is a larger size and includes features outside of what is demarcated in EdRc-25. As EdRc-25 and the Hunting Blind Complex are within the proposed mine pit, avoidance of the site is not feasible. The Archeological Sites VC proposes mitigation that includes further investigation of this, focusing on determining the antiquity and function of the site, understanding the cultural values associated with the site, and how these could be related to possible mitigation options. A final mitigation strategy for the site will be determined through discussion between KAM, SSN, and the Archaeology Branch. KAM will continue to engage the SSN in identifying mitigation for ceremonial practices with respect to the Hunting Blind Complex. This may include but is not limited to relocating features of the Hunting Blind Complex to a suitable location identified by the SSN, documenting the Hunting Blind Complex using 3D imagery, preparation of a documentary or scaled 3D model of the Hunting Blind Complex for educational purposes, and funding for heritage education or other relevant programming.

Jacko Lake

The Project infrastructure will not overprint the Prayer Tree and no effects are anticipated to this portion of Jacko Lake. As discussed the north east arm of Jacko Lake will be removed representing 6% of the total area of Jacko Lake at full pool. The north east arm of Jacko Lake is an artificial arm that was created when the water level of the lake was raised as result of dams built by Teck Cominco in the 1990s to control the lake discharge). With respect to access:

- Current access to the north side of Jacko Lake, where the Prayer Tree is located, is only available via boat – there is no public road access to this portion. The blasting periods may include restricted access once a day for up to two hours depending for activities on Jacko Lake within the specified blasting buffer area. KAM will have appropriate signage indicating planned blasting times and will communicate with SSN regarding when blasting is likely to occur and demarcate those areas.
- Project-related noise will be noticeable in the Jacko Lake area due to increased levels of traffic, sheet piling activities (during the Construction phase) and other Project activities. During Construction, Operation, and Decommissioning and Closure phases, air quality deterioration and particulate matter (i.e., dust) may be visible if dust generation by fugitive point sources is noticeable. There will be a moderate degree of visual effect during Construction and Operation from Jacko Lake (including the boat launch).

Jacko Creek

Jacko Creek will remain available to the SSN as the Project is not anticipated to affect availability of this area for ceremonial practices. Access to Jacko Creek will remain for the SSN.

Peterson Creek

Middle Peterson Creek will no longer be available for ceremonial practices, since it will be overprinted

by Project components. However, the upper east portion of Peterson Creek (upstream Jacko Lake) will remain available to the SSN as the Project is not anticipated to affect availability of these areas for ceremonial practices. Lower Peterson Creek, an identified value to the SSN in part because of the presence of fish spawning locations, will also continue to be available to the SSN for ceremonial practices. Access to middle Peterson Creek, within the footprint of the mine, will continue to be inaccessible for ceremonial practices as well however, access to portions of Peterson Creek outside of the mine footprint will remain for the SSN as will lower Peterson Creek. There will be a moderate degree of visual effect during Construction and Operation from portions of Peterson Creek.

Goose Lake

Goose Lake was identified as having a cultural value to the SSN, however no other information was available at the time of writing. Goose Lake will be overprinted by the TSF and will no longer be available for ceremonial or cultural practices by the SSN. Access to this area has been limited for some time, affecting SSN's ability to access the area for ceremonial practices due to private property and fencing.

In summary, ceremonial and others practices by SSN members will change for some areas; the Hunting Blind Complex and Goose Lake will disappear as a result of the Project. In addition, there will be sensory disturbances around Jacko Lake. KAM will also provide support to the SSN to participate in accessing, harvesting, and/or documenting resources of cultural or ceremonial value prior to the Project footprint disturbance. KAM will work with the SSN to identify opportunities to support cultural heritage programming for SSN members.

Alternative Areas to Practice Ceremonial or Cultural Interests

KAM recognizes that the practice of ceremonies can be site specific. Therefore, alternative locations for the practice of ceremonial or cultural interests are not discussed in this section.

Characterization of the Effects on SSN Practice of Ceremonial Interests

Magnitude is considered moderate because of the Hunting Blind Complex, Goose Lake, and portions of Middle Peterson Creek.

Duration is anticipated to be far-future because of access to ceremonial areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered site-specific, as the effect is limited to specific sites within Pípsell (Hunting Blind Complex, Goose Lake and Middle Peterson Creek). The area potentially affected by the Project comprises a relatively small proportion of SSN's traditional territory (0.14% maximum).

Frequency of the residual effects on SSN cultural use interests are predicted to be continuous during all phases of the Project.

Reversibility – The effect is expected to be permanent.

Context is considered high because of the importance of the Pípsell area to the SSN for the practice of ceremonial interests (past, current, or future use). Pípsell has been noted as a cultural keystone place for the SSN.

Based on the characterization provided above and in consideration of the assessment of effects to the practice of ceremonial or cultural interests, it is anticipated that the Project would have a moderate effect on SSN's ability to practice ceremonial interests in the traditional territory.

Cumulative Effects on the Practice of SSN Interests

The Project contributes to cumulative effects on SSN interests such as fishing, hunting and trapping, plant gathering and the practice of ceremonial or other cultural practices due to additional land disturbances that the development of the mine infrastructure will generate as described in Section 8.5. However, under current conditions, the main contributing factor for the cumulative effects are the past, existing or planned agricultural activities – represented by the extent of the Agricultural Land Reserve – which cover important portions of the study areas used for assessing effects on CULRTP (i.e., 56% and 58% of the LSA and RSA respectively). Also, access is currently restricted within private lands in the area where the Project is located (i.e., approximately 90% of the LSA of CULRTP), which is another important factor contributing to cumulative effects on SSN interests. Sensorial disturbances such as noise and changes in the visual landscape are also contributing to cumulative effects given the presence of industrial and commercial activities, transport infrastructure (i.e., major highways such as Hwy 1 and Hwy 5) and urban areas such as Kamloops.

With the development of the Project, it is expected that the overall levels of land disturbance and access restrictions would increase which would be partially mitigated once the Project reaches its closure stage and re-vegetation and habitat rehabilitation is implemented to achieve post-closure land use objectives. However, once the Project reaches its Post-Closure phase, it is expected that the level of disturbance in the terrestrial habitat will remain high (i.e., approximately 80% of the LSA of CULRTP). Given that the upper west sub-catchments of Peterson Creek has been subject to a lesser degree of disturbance compared to other areas of the catchment and that fishing opportunities remain available in this area, the cumulative effect on fishing is considered to be of a lesser magnitude compared to terrestrial uses such as hunting, plant gathering and ceremonial use.

The mine site, where land disturbance will occur during Construction, Operation, and Decommissioning and Closure represents 0.14% of the SSN traditional territory, therefore other areas within the traditional territory and not currently affected by other projects or activities would remain available for the practice of fishing, hunting and trapping, plant gathering and ceremonial and other cultural interests.

Interconnectedness of Pípsell

Pípsell was identified by the SSN as a cultural keystone place. The Peterson Creek catchment is the area where the components of Pípsell are located, as noted by SSN (i.e., Jacko Lake, Jacko Creek, Peterson Creek, Goose Lake, and the Hunting Blind complex). Jacko Creek, Jacko Lake, and Peterson Creek are interconnected water bodies.

Jacko Creek is located in West Upper Peterson Creek and joins Peterson Creek approximately 2 km upstream of Jacko Lake. The Jacko Creek sub-catchment is not affected by any of the Project facilities but some of the facilities will be visible and noise and dust may be noticeable from Jacko Creek. Jacko Lake will be affected by the Project due to effects on the north east arm. Jacko Lake will

discharge into a pipeline which will cross the mine site and discharge into the water in the Peterson Creek Downstream Pond, from where there will be a controlled discharge of non-contact water from Jacko Lake to the lower Peterson Creek. Noise, dust and changes to the visual landscape will be noticeable from Jacko Lake during Construction and Operation, but noise and dust will greatly diminish during Decommissioning and Closure and will cease during Post-Closure.

The upper portions of Peterson Creek catchment will not be affected by the Project. Middle Peterson Creek is the section where most of the disturbances will occur given the mine facilities occupy 1,705 ha or 90% of this portion of the catchment. The connection between Upper and Lower Peterson creek will continue artificially, as described above by allowing the discharge of Jacko Lake to reach lower Peterson Creek by pipeline and controlled discharge from the Peterson Creek Downstream Pond. The Project will cause lower than baseline flows in Lower Peterson creek because the run-off falling within the mine site during Construction and Operation (i.e., contact water) will be contained and used in the ore processing. During Decommissioning and Closure and Post-Closure when mining activities cease, there will be lower flows will continue in lower Peterson Creek (lower than baseline flows) because of the reduced catchment area within middle Peterson Creek.

Goose Lake falls within the Peterson Creek watershed but it is an isolated water body which does not discharge into the Peterson Creek main channel or any other tributaries. Goose Lake acts as an evaporation pond and has a shallow depth, therefore the lake does not support fish but it has been reported that the areas around the Lake are preferred hunting grounds. Goose Lake and the surrounding area will no longer be available and will become part of the TSF. During Decommissioning and Closure, a dry cover will be placed on the TSF pond and grassland type habitat is expected to develop.

The Hunting Blind Complex and surrounding areas fall within the boundaries of the open pit and will be removed to allow access to the ore body. Once mining activities cease the open pit will be closed and access to this area will not be allowed. The open pit will partially fill with water and a pit lake will form during the Post-Closure phase, but the slopes of the pit will not be restored as suitable habitat for wildlife nor will the pit lake support aquatic life. The open pit occupies approximately 300 ha and represents 17% of the mine footprint (and 0.02% of SSN traditional territory).

13.6.4.2 *Other Potential Effects*

Effects on the Ability to Protect the Jacko Lake Area for Maintaining Traditional Cultural Practices and the SSN Way of Life

The SSN raised concerns about how the Project could interact with its ability to protect the Jacko Lake area for maintaining cultural practices and the SSN way of life. At the time of writing, the frequency or reliance on cultural and traditional practices in Jacko Lake and its surroundings was unknown. However, historical evidence indicates a reliance in this area for ungulate hunting (especially elk which has since been extirpated), plant and root harvesting in spring, and the spring trout fishery at Jacko Lake. Traditional cultural practices and the SSN way of life in this area began to experience disturbances in the late 1800s as a result of industrial and agricultural activities within the SSN traditional territory and Pípsell.

Since the late 1800s, the surrounding area and traditional territory has also been affected by the development of the transcontinental railroad, rapid population growth, and infrastructure developments, including bridges and highways. The growth of the timber and agricultural industry also caused disturbances within Pípsell. Ranching (including cattle grazing) also developed, and is currently ongoing immediately within and adjacent to Pípsell. Forestry and mining activities have been ongoing in the area for over 100 years, with more sustained activities occurring since the 1970s. The proposed mine infrastructure will occupy 1,705 ha of land. Approximately 225 ha or 13% of this land has been classified as disturbed by previous activities including open pit mining conducted by Teck Cominco during the 1990s, agricultural activities and road developments. The SSN CHS describes the existing alienation that members feel from accessing these areas in the present day due to private property, fencing and ranching. Therefore the ability to protect Jacko Lake and its surroundings has been affected since the 1860s and has continued into the present.

The Project has the potential to further interact with SSN's ability to protect this area. The Peterson Creek catchment is the area where the components of Pípsell are located, as noted by SSN (i.e., Jacko Lake, Jacko Creek, Peterson Creek, Goose Lake and the Hunting Blind complex). Jacko Creek is located in West Upper Peterson Creek and joins Peterson Creek approximately 2 km upstream of Jacko Lake. The Jacko Creek sub-catchment will not be affected by any of the Project facilities however some facilities may be visible and noise and dust may be noticeable from Jacko Creek.

Jacko Lake will be affected by the Project by the removal of its north east arm (an artificial arm that was created when the water level of the lake was raised as result of dams built by Teck Cominco in the 1990s to control the lake discharge). Trout is stocked and can only be fished using rod and reel – nets are prohibited. While Jacko Lake is important because it provides fish during early spring, it is unlikely to obtain a substantial amount of fish from this lake given the small size of fish in this lake (less than 250 g) and the fact that better fishing locations become available later during the year (e.g., Thompson River and Kamloops Lake).

Noise, dust and changes to the visual landscape will be noticeable from Jacko Lake during the Construction and Operation phases, but noise and dust will greatly diminish during Decommissioning and Closure and will cease during Post-Closure. Fishing, ceremonial and plant gathering practices are expected to continue in this area with some modifications.

The upper portions of Peterson Creek catchment will not be affected by the Project as illustrated in Figure 13.6-1. Goose Lake doesn't support fish but it has been reported that the areas around the Lake are preferred hunting grounds (although in the present day the majority of this land is private). Goose Lake and the surrounding area will no longer be available. The Hunting Blind complex is currently located within KAM's mining leases and private land (simple fee) also owned by KAM.

The complex and surrounding areas fall within the boundaries of the open pit and will be removed to allow access to the ore body. Once mining activities cease the open pit will be closed and access to this area will not be allowed. The open pit occupies approximately 300 ha and represents 17% of mine footprint and 0.02% of SSN's traditional territory and does not have potential to be returned to similar to current conditions.

Pípsell is primarily located on privately owned (fee simple) lands and not Crown lands. KAM has not purchased Crown lands; land has been purchased through third parties. However, the Project does have the potential to affect SSN's ability to protect Jacko Lake and surrounding area, particularly as a result of changes in access to the land (to the extent that such occupation is not already affected by fee simple ownership). During Construction and Operation, safety zones, enforced around the open pit during blasting periods, will include restricted access to parts of Jacko Lake. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to certain areas such as portions of Goose Lake Road. Areas within the mine footprint will continue to be inaccessible for SSN members (middle Peterson Creek). To mitigate effects on SSN's ability to protect Jacko Lake for continued TLU practices, KAM will facilitate continued access to Jacko Lake. KAM will work with the SSN to document past, present, and future land uses in the areas surrounding the Project and in the larger traditional territory. This will aim to support SSN involvement in future land use planning for consideration in the Reclamation and Closure Plan. However, fishing, ceremonial and plant gathering practices are expected to continue in the immediate area surrounding Jacko Lake with some modifications.

Impacts to Ancestral Grave Sites

At the time of writing, no ancestral grave sites were found by KAM's archaeologists in the Project footprint. SSN's 2014 CHS describes potential burial sites and since that time KAM has made efforts to collaborate with SSN on identifying and recording locations of cultural significance, particularly potential burial locations. On October 16, 2014 SSN notified KAM that they intended to perform ground penetrating radar on-site at potential burial site locations. Two sites were visited. The first site had approximately 12 locations that were investigated; the second site had three. As per SSN's request, KAM's consultants did not actively participate in the investigations; however, no gravesites were identified.

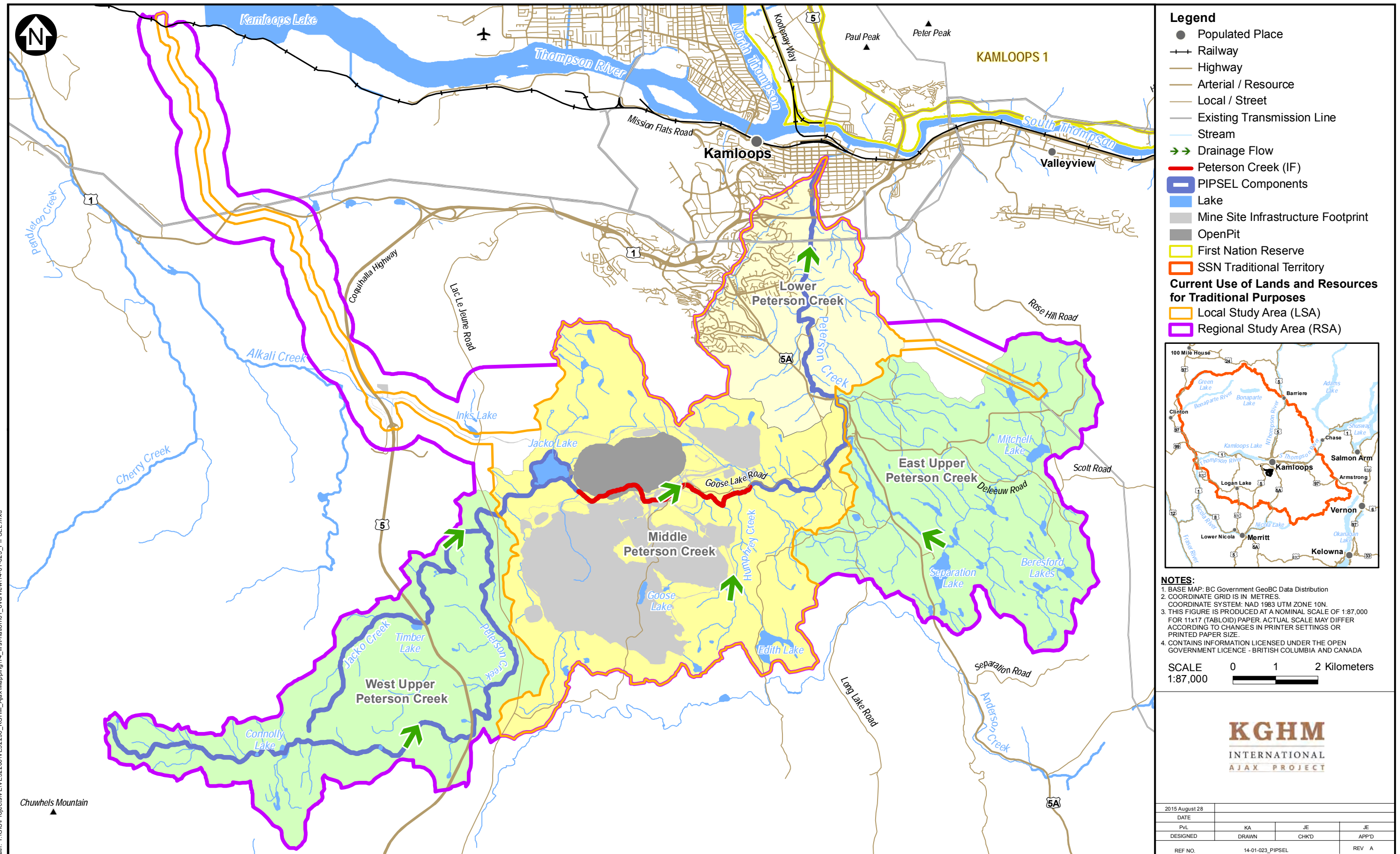
Since that time SSN has raised concerns about effects to potential burial sites. KAM followed up with SSN committing to set dates with SSN for meetings to review SSN's information on potential burial sites and provide assistance for potential follow up work if required. KAM's archaeologists also investigated all potential burial sites within the LSA and found no indication of any burial sites.

KAM has continued to contact SSN to discuss the potential burial sites identified in SSN's CHS. KAM also offered to collaborate with SSN on identifying and formerly recording locations of cultural significance. On April 2, 2015 SSN sent a letter in response to KAM's letters regarding potential burial sites noting a need for additional resources and time. To date, no ancestral grave sites have been identified in the Project footprint.

To mitigate potential effects on cultural and heritage values, KAM implemented a site disturbance policy which stipulates:

- provide SSN with a minimum of 30 days advance notice (prior to formal submission to regulators) outlining the details of NOW/Multi-Year Area Based Permitting Applications;
- discuss the pre-screening materials with SSN during the 14 day period;
- implement, where possible, use of existing roadways and access trails;

Figure 13.6-1
Geographic Representation of Pipsell



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- maintain, where possible, a 50-m setback distance from all waterbodies, wetlands and riparian habitat for mechanical earthworks;
- conduct archaeological, ecological and cultural assessments prior to work, where practical;
- implement an Archaeological Chance Finds Procedure and a Wildlife Management Plan (both were provided to SSN for reference);
- invite SSN to site during site disturbances including mechanical trenching/digging, drill pad and sump construction, roadworks, etc.; and
- reclaim site disturbances, conditions permitting.

SSN monitors are present for all excavations on the Project site and report on chance findings. The chance findings protocol means that any chance findings are reported through Project Site Operation and all work associated with the site is halted until the Archaeologist of Record has completed a more in-depth investigation of the chance find and clears the site to continue work activities.

Potential Effects to Cultural Heritage

The SSN raised concerns about the Project's potential to affect cultural heritage including loss of culture, knowledge, loss of legal relations to the land, loss on future generations of SSN members, loss of lifestyle and loss of identity. Cultural Heritage effects for the SSN are described in Chapter 14 (Other Potential Effects on Aboriginal Interests).

Although the CHS provides information on historic and current practices as well as the spiritual significance within the Project vicinity, it contains limited information on SSN dependence on the area for lifestyle, identity, culture, knowledge and future land uses. In the absence, of more detailed information this section provides a general discussion about the interactions with Cultural Heritage. Chapter 14 provides additional detail.

Historical evidence indicates a reliance in this area for ungulate hunting, plant and root harvesting in spring, and the spring trout fishery at Jacko Lake. Pípsell (Jacko Lake and its surroundings) is considered an important cultural landscape and place with spiritual and cultural value (SSN, pers. comm., 2014). The area is noted to be a storied site with spiritual and cultural values which include an offering tree, spiritual connections and a place of prayer to communicate with water beings (Ignace et al. 2014).

As described, the areas of Pípsell have been altered from agricultural, forestry, and industrial activities. The SSN CHS describes the existing alienation that members feel from accessing these areas in the present day due to private property, fencing, and ranching. However, the Project could further affect SSN's cultural heritage; for example, use of the Hunting Blind Complex for inter-generational teaching of traditional practices, the teaching of language or other cultural practices such as fishing, trapping, hunting, plant harvesting or ceremonial/cultural. These practices may be affected by further changes in access to some areas (middle Peterson Creek) or through employment with the mine that may conflict with the timing of inter-generational teaching, knowledge transfer and cultural teachings. There is also the potential for Project activities during the Construction, Operation, and Decommissioning and Closure phases to overlap with the timing of traditional activities.

Changes in the ability to participate in TLU may also affect the health and wellbeing of SSN members given that land is closely tied to cultural practices. A loss of cultural identity can result in negative effects on community members such as social disruption, changes to quality of life and changes in community and family structures. At the time of writing, there was limited information on the dependence or frequency of TLU in the Pípsell area and is therefore difficult to predict the effects of the Project on components of culture. The vast majority (90%) of the areas surrounding the Project are private (fee simple) property, therefore SSN's cultural heritage (including identity, knowledge, use by future generations) in these areas has already been disturbed (i.e., as a result of the previous Teck Cominco mine activities and the extent of fencing, ranching and other industrial activities).

To mitigate potential effects on cultural heritage, KAM will make reasonable efforts to accommodate working schedules for members of Aboriginal Groups. As part of its corporate social responsibility policy, KAM will also inform all employees of their duty to respect Aboriginal culture and practices. Other mitigation includes:

- work with the SSN to document past, present, and future land uses in the areas surrounding the Project and in the larger traditional territory. This will aim to support SSN involvement in future land use planning for consideration in the Reclamation and Closure Plan;
- provide support to the SSN to participate in accessing, harvesting, and/or documenting resources of cultural or ceremonial value prior to the Project footprint disturbance;
- work with the SSN to identify opportunities to support cultural heritage programming for SSN members; and
- continue efforts to negotiate and conclude a Project Agreement with the SSN

Additional information on mitigation with respect to tangible objects of cultural heritage is provided in Section 9.1 (Archaeological Sites) and Section 9.2 (Heritage Sites).

Impacts to the Spiritual Significance of Jacko Lake

At the time of writing, there was a limited understanding of SSN's perception of spiritual significance but it may be connected to maintaining the intactness of Jacko Lake, avoiding any type of disturbance to the spirits which are thought to inhabit the lake, and maintaining the integrity of the lake. In the absence of a detailed understanding of SSN's perceptions, the following section presents a general discuss about how the Project could affect the spiritual significance at Jacko Lake.

With respect to the integrity of Jacko Lake, it has underwent modifications since the early twentieth century (see Section 8.7 Supporting Topic - Jacko Lake), such as:

- development of a dam in 1913 on the southeast arm of Jacko Lake, which is the outflow to Peterson Creek. The dam was built to store water and offer flood control for Kamloops;
- development of the northeast arm and the southeast arm;
- changes in size and shape of the lake and its water levels. In the 1950s, the lake was about 40 ha with an inlet and outlet; and
- artificial stocking of the Lake with trout since the early 1950s.

In addition, Jacko Lake is located on private land with public boat launch seasonally accessible via Crown land. The Afton Operating Corporation (AOC), which purchased the land surrounding Jacko Lake from the Morrison Ranch in 1988 to access the Ajax ore bodies, concluded agreements that guaranteed continuity of public access for recreational fishing. Access was maintained through the establishment of a road easement to the lake and a lease for the land to be used for parking and a boat launch at the northern most arm of the lake (Price 1991). The road easement leading to Jacko Lake via Lac le Jeune road, as well as the area set aside for parking and the boat launch, was then purchased by the Ministry of Environment Fish and Wildlife branch.

These past activities have likely affected access to Jacko Lake as well as its spiritual significance for the SSN. The Project will further interact with the Lake due to Project activities. Jacko Lake will be affected by the removal of its north east arm which is required for the Project development. Noise, dust, and changes to the visual landscape will be noticeable from Jacko Lake during the Construction and Operation phases, but noise and dust will greatly diminish during Decommissioning and Closure, and will cease during Post-Closure. KAM will maintain access to Jacko Lake through development of an alternative road and parking lot. KAM will work with the SSN to mitigate potential effects on the spiritual significance through continued consultation and discussions on appropriate measures to negotiate and conclude a Project Agreement with the SSN.

13.6.4.3 *Aboriginal Title*

The SSN assert Aboriginal interests in the areas surrounding the Project, noting that the Secwépemc people lived in, used and supported their way of life on the lands surrounding the Project (SSN, pers. comm., 2014). The SSN also assert interests to particular areas such as Jacko Lake and surrounding areas (also known as Pípsell), including Jacko Lake, Goose Lake, Jacko Creek (upper Peterson Creek) and the Hunting Blind Complex. The SSN believe there is an interconnectedness between these geographic components and that interconnectedness plays an important role in their worldview and cultural values, practices, and traditions.

As discussed above, in May of 2015, the Province of BC issued a revised strength of claim assessment stating that in the Province's view the SSN have strong prima facie claims for both Aboriginal rights and title in the vicinity of the Project.

While the SSN's claim to the area is strong, the precise nature, extent, and exact location of SSN Aboriginal title lands within the Project area are uncertain. KAM will continue to seek direction from both provincial and federal regulators with regard to the SSN's Aboriginal title claims within areas potentially affected by the Project.

Depending on the location of Aboriginal title lands, the Project could interfere with ownership or other rights relating to use and control of land associated with Aboriginal title if that title is proven. Any potential interference caused by the Project with Aboriginal title would last for at least 30 to 35 years. The following assessment seeks to broadly describe potential effects from the Project on SSN title, focusing on the rights that would be held by SSN title holders if title were established. If SSN were to establish Aboriginal title to the Project area, the Project has the potential to affect aspects of the title-holder's rights, including the rights to decide how the land will be used, the right to possess the land, and the right to economic benefits of the land.

At the time of writing, the existence, nature, extent, and boundaries of Aboriginal title over the Project area is unclear and therefore caution should be used in interpreting the results of this section. It is not possible to estimate with any reasonable level of confidence the degree of potential Project interactions with those aspects of asserted Aboriginal title. In addition, the extent of title remains unclear given the early stages in the development of the law. The following sections will describe the potential effects on Aboriginal title that could occur, should title be proven in court or otherwise established.

Occupancy of the Land

The SSN declare Aboriginal title in the areas surrounding the Project and have raised concerns about the potential effects on exclusive occupancy and use of these lands by SSN members. As KAM understands it, SSN's declaration of Aboriginal title applies to not only Crown lands, but privately owned (fee simple) lands within the Project area.

Aboriginal title includes the right to determine the uses to which the land should be put and to benefit from the land.

The vast majority (90%) of the CULRTP LSA where the Project is located is private fee simple lands that were previously disturbed by past mining activities. KAM's acquisitions of lands for the Project have all been from private third parties; it has not purchased any Crown lands for the Project.

There exists uncertainty at law as to the interaction between Aboriginal title and private fee simple title. Given this uncertainty, there is potential for the the Project to affect SSN's exclusive occupancy of the land, particularly as a result of changes in access to the land (to the extent that such occupation is not already affected by fee simple ownership). During Construction and Operation, safety zones, enforced around the open pit during blasting periods, will include restricted access to parts of Jacko Lake. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to certain areas such as portions of Goose Lake Road. Areas within the mine footprint will continue to be inaccessible for SSN members. To mitigate effects on SSN occupancy of the land, KAM will work with the SSN to document past, present, and future land uses in the areas surrounding the Project and in the larger traditional territory. This will aim to support SSN involvement in future land use planning for consideration in the Reclamation and Closure Plan.

Aboriginal Governance

The SSN declare Aboriginal title at Pípsell (Jacko Lake and surrounding area). The Project is located in proximity to Pípsell (Jacko Lake and its surroundings) which is a cultural keystone area with significant spiritual and historical importance to the SSN. The area is connected by the epic oral history titled in English, *The Trout Children*, stemming from Jacko Lake and its surrounding which explains the deeds of Secwépemc people on the lands and to the land as inseparably connected. Pípsell and its Secwépemc *stsq'ey'* (indigenous laws) provide the narrative foundation for ownership and stewardship of Secwépemc lands and resources. The Secwépemc law concept of *x7ensq't* (the land and sky turning on you) is directly connected to this area because the SSN believe the area has spiritual power due to past events. The SSN also believe there was a special

responsibility and governance to safeguard this area and ensure a respectful relationship with the land. The SSN have raised concerns that the Project could affect the ability to retain governing jurisdiction over the Project lands, including deciding how it is used.

Should the Project be developed, it has the potential to further affect SSN's decision-making power (governance and jurisdiction) on how the land within the Project footprint will be used and preserved for future generations. Currently, the Crown has governing jurisdiction over the land and has provided permission to private landowners, including KAM, to use the land for agricultural activities, ranching and industrial developments such as exploration. However, the Project footprint comprises 0.14% of SSN's traditional territory, and would not interfere with SSN's title rights in other areas of the traditional territory. The vast majority (90%) of the areas surrounding the Project are private (fee simple) property, therefore SSN's title rights in these areas has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities). The current land ownership (in the Project footprint and immediate areas) is predominantly owned by third parties. KAM has not purchased Crown lands; land has been purchased through other third parties. If exploration and development of the mine proceeds, KAM's right to mine the lands would exist for 30-35 years.

To mitigate effects on governance rights, KAM will provide support for government to government revenue sharing as appropriate between the SSN and provincial/federal crowns and provide regular updates to the SSN regarding the amount of resources removed from the area as a result of Operation.

Aboriginal Economies

The Project proposes an average annual production of 140 million pounds of copper and up to 130,000 ounces of gold in concentrate for a period of 23 years. With respect to timber, net volumes of merchantable timber in crown land within the mine site account for approximately 24,000 m³.

The SSN have raised concerns that the Project could affect title rights which include the right to benefit economically from the land and may include effects on land, timber, minerals, plants, and wildlife used by SSN. Should SSN establish Aboriginal title, the Project has the potential to affect the SSN's ability to benefit economically from the areas where the Project is located. The interference with SSN economic title rights over these lands would last 30-35 years. The Project footprint comprises 0.14% of SSN's traditional territory, and would not interfere with SSN's ability to benefit economically from other lands in the traditional territory. The vast majority of the areas surrounding the Project are private (fee simple) property, therefore SSN's ability to benefit economically from this land has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities).

KAM continues to support the SSN, through economic ventures related to the Project. Between July 2013 and March 2015, SSN companies were awarded over \$3.5 million in related contracting opportunities. KAM is developing a Human Resources Strategy which will aim to support SSN members in supplying contracting, employment, or training to the Project. To mitigate effects on economic rights, KAM will provide support for government to government revenue sharing as appropriate between the SSN and provincial/federal crowns. In addition, efforts will continue to

negotiate and conclude a Project Agreement with the SSN. KAM is exploring opportunities to SSN to participate in timber salvage operations.

Conclusion

The Project is located in an area over which the SSN assert Aboriginal title. As described, the Project has the potential to affect aspects of the title-holder's rights, in particular the right to possess the land (occupancy), the rights to decide how the land will be used (governance), and the right to economic benefit of the land. Depending on the location of SSN title lands, the Project could interfere with ownership or other title rights and that interference would last for at least 30-35 years.

However, the Project footprint comprises 0.14% of SSN's traditional territory, and would not interfere with SSN's title rights in other areas of the traditional territory. The vast majority (90%) of the CULRTP LSA where the Project is located is private property, therefore SSN's title rights in these areas has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities). The current land ownership is predominantly owned by third parties and KAM has not purchased Crown lands; land has been purchased through third parties. Currently, the Crown has governance over how mineral resources in the lands are used. However, the Project does have the potential to affect SSN's exclusive occupancy of the land, as a result of changes in access to the land. There will also be economic benefits as a result of the Project Agreement and negotiations are ongoing with the SSN. KAM remains committed to ensuring the SSN are involved in the Project in a meaningful way, as evidenced by the variety of mitigation measures proposed.

13.7 ASHCROFT INDIAN BAND

The AIB is a part of the Nlaka'pamux Nation, for which traditional territory maps are presented in Figure 12.2-1 in Chapter 12. In a meeting with AIB, it was noted that the Secwépemc and the Nlaka'pamux have historically strong family ties (AIB, pers. comm., 2014). The Nlaka'pamux traditional territory covers approximately 3,456,145 ha, of which 0.05% or 1,705 ha overlap the Project components (Figure 12.2-1 in Chapter 12).

13.7.1 Past, Current, and Anticipated Land Uses

Traditional land use activities remain important to AIB members. Moose, deer, and grouse are hunted in the areas near Ashcroft (AIB, pers. comm., 2014). AIB noted that members harvest salmon in the Thompson River although specific locations were not provided. Plants gathered include Hoosham, Indian celery, potatoes, and onions in the areas around Ashcroft. In fact, a course on traditional plants is being taught at Thompson Rivers University by an AIB member (AIB, pers. comm., 2014).

During consultation on the draft AIR/EIS Guidelines, the AIB asserted Aboriginal rights and title (including governing jurisdiction) to its traditional territory. The AIB stated their territory is a vast and ecologically diverse landscape with cultural values and interests inherent to Nlaka'pamux traditions. These areas include components such as medicine gathering, hunting, fishing, plant gathering, spiritual, archaeological, historical, and current family gathering sites. AIB members have

carried and continue to carry out these practices and cultural heritage components throughout Ashcroft traditional territory, including Kamloops and the Project area. Subsequently, during a meeting in December 2014, AIB Chief and Council stated that there is limited, if any, TLU by AIB members in the vicinity of the Project (AIB, pers. comm., 2014).

With respect to anticipated future land uses, consultation is ongoing between KAM and AIB. This may yield additional information on the anticipated future use of lands and resources that may potentially be affected by the Project. Should AIB provide additional information to KAM, it will be considered and incorporated in on-going Project planning. Given the lack of information on future uses, the assessment assumes that future uses will continue at the current level.

Additional information on the AIB is presented in Chapter 12; KAM's consultation efforts with AIB are described in Chapter 15.

13.7.2 Asserted AIB Aboriginal Interests (Rights and Title)

This section describes the key Aboriginal interests raised by AIB up until July 31, 2015. KAM understands the importance of collecting and considering information on potentially affected asserted Aboriginal rights. With this in mind, KAM implemented the following approaches to collecting information on asserted rights with the AIB:

- site tours;
- meetings with AIB leadership; and
- literature reviews and secondary data collection.

In October 2014, KAM signed a Consultation and Benefits Agreement with AIB to facilitate their participation in consultation activities and support their review of the Application/EIS. Detailed information on consultation activities undertaken with AIB is provided in Chapter 15. Table 13.7-1 presents a summary of AIB concerns and interests raised in relation to the Project.

13.7.3 AIB Interests Effects Assessment and Mitigation

This section discusses how the practice of AIB interests could be affected by the Project in each of its phases: Construction, Operation, Decommissioning and Closure, and Post-Closure. The analysis considers both potential direct and indirect effects of the Project and identifies interrelations between the VCs and the Aboriginal Interests. This section also describes the measures that will be used to avoid, mitigate or otherwise accommodate potential effects.

The Project has the potential to affect the practice of Aboriginal interests through changes in the availability of harvested resources, changes in access to harvesting areas, changes in the harvesting experience, and changes in the quality of the plants or animals that are harvested for human consumption. This section describes the residual effects on AIB right to fish, hunt and trap, gather plants, and practice ceremonial uses, considering these four factors.

CULRTP (Section 8.5) provides a detailed discussion of potential effects on Aboriginal land uses, including key interactions and relevant mitigation.

Table 13.7-1. Summary of AIB Interests (Rights and Title) Raised in Relation to the Project

Asserted Right	Concern	Manner Raised	Valued Component Affected
Fishing	Potential effects on the Thompson River	BC EAO Working Group Meeting	Fish habitat and fish populations Noise and vibration Current Use of Lands and Resources for Traditional Purposes
	General concerns about changes to water quantity and quality	Consultation	Fish habitat and fish populations Surface Water and Groundwater Quality Surface Water and Groundwater Quantity Current Use of Lands and Resources for Traditional Purposes
Hunting	Potential effects on animals including cattle from metals	Consultation	Mammals Current Use of Lands and Resources for Traditional Purposes Human Health
Title	AIB asserted Aboriginal title to its traditional territory	Consultation	Not applicable

With respect to potential contamination of the resources harvested for consumption by Aboriginal Groups, the risk to human health associated with the ingestion of country foods, including fish, animals, and plants, has been assessed under the human health VC (Section 10.4). Mitigation measures specific to human health were not been recommended. Mitigation measures to control air and dust emissions outlined in the air quality effects assessment (Section 10.1) and mitigation measures to control surface water and groundwater discharges outlined in the water quality effects assessment (Section 6.3) will reduce Project emissions to levels that are protective of human health.

13.7.3.1 Summary of Residual Effects on AIB Interests

Practice of Fishing Interests

Traditional land use activities, including fishing, are limited, if any, in the area potentially affected by the Project, as indicated by AIB representatives (AIB, pers. comm., 2014). Fishing sites identified by AIB (i.e., Thompson River) are not anticipated to be affected by the Project.

The Project effects on fish habitat are limited to the north east arm of Jacko Lake and middle Peterson Creek. A fish habitat mitigation and offsetting plan will be implemented in Inks Lake, which is located within the Nlaka'pamux traditional territory.

Access will be maintained similar to current conditions, should AIB members use Jacko Lake to harvest fish.

Characterization of the Effects on AIB Fishing Interests

Magnitude is negligible since the residual effects of the Project are restricted to a relatively small area where the practice of fishing activities by AIB members is understood to not occur. The Project will not impede fishing in areas identified by AIB as preferred fishing sites (i.e., Thompson River).

Duration - The residual effect on fishing interests is anticipated to be far-future because of restricted access to portions of middle Peterson Creek will continue until Post-Closure.

Geographic extent is considered local as it will only affect limited fishing sites within the Peterson Creek watershed and do not extent to other watersheds. The Peterson Creek catchment area, including the areas where the Project is proposed, comprise a very small proportion of Nlaka'pamux traditional territory.

Frequency of the residual effect on fishing interests is predicted to be continuous during all phases of the Project.

Reversibility - The effect on fishing interests is expected to be partially reversed with the implementation of the fish habitat offsetting and when Project activities cease. The effect is considered reversible long-term.

Context is considered low because preferred fishing sites identified by AIB are outside the Project area and fishing in these sites will not be affected by the Project (i.e., Thompson River, areas near Ashcroft). The AIB noted that most TLU activities occur near AIB reserves (approximately 90 km from the Project). The area potentially affected by the Project is understood to not be a preferred fishing site for AIB members.

Based on the characterization provided above and in consideration of the results of the assessment of effects to fishing as well as other relevant VCs, it is anticipated that the Project would have a negligible effect on AIB's ability to practice fishing interests in the traditional territory.

Practice of Hunting and Trapping Interests

Traditional land use activities by AIB members, including hunting and trapping, are limited, in the area potentially affected by the Project, as indicated by AIB representatives (AIB, pers. comm., 2014). Preferred hunting/trapping areas identified by AIB will not be affected by the Project (i.e., areas around Ashcroft).

The Project effects are limited to the middle Peterson Creek catchment which is already highly affected by past projects and activities and where access is already limited due to private property and fencing. Given that the vast majority of the areas surrounding the Project are private property, hunting in these areas is likely limited as a result of fencing, ranching, and other industrial activities. Access to Jacko Lake will be maintained through construction of an alternative access road. The effect on hunting and trapping activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat rehabilitation.

At worst, the Project footprint would limit access to areas where hunting practices by AIB are already limited and within a small portion (0.05%) of the Nlaka'pamux traditional territory.

Characterization of the Effects on AIB Hunting Interests

Magnitude is negligible since the effects are restricted to areas surrounding Goose Lake and Middle Peterson Creek, where the practice of hunting activities by AIB members is understood to not occur. Hunting locations identified by AIB (i.e., areas around Ashcroft) will not be affected by the Project.

Duration is anticipated to be far-future because of access to hunting areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected by the Project comprises a very small proportion of Nlaka'pamux traditional territory (0.05%).

Frequency of the residual effect on AIB hunting interests are predicted to be continuous during all phases of the Project.

Reversibility - The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of hunting will be restricted permanently.

Context is considered low because other alternate hunting locations are available in the vicinity of the Project, near AIB reserves, where AIB can continue practicing hunting interests. Preferred hunting sites identified by AIB (i.e., areas near Ashcroft) will not be affected.

Based on the characterization provided above and in consideration of the results of the assessment of effects to hunting as well as relevant VCs, it is anticipated that the Project would have a negligible effect on AIB's ability to practice hunting interests in the traditional territory.

Practice of Plant Gathering Interests

Traditional land use activities by AIB members, including plant gathering, are limited, in the area potentially affected by the Project, as indicated by AIB representatives (AIB, pers. comm., 2014). Gathering locations identified by AIB (i.e., areas around Ashcroft) will not be affected by the Project.

At worst, the Project footprint would limit access to areas within a small portion (0.05%) of the Nlaka'pamux traditional territory, where gathering practices by AIB are already limited. The Project affects a relatively small area, which is already highly affected by past projects and activities or where access is already limited due to private property and fencing. Given that the vast majority of the areas surrounding the Project are private property, gathering in these areas is likely impeded as a result of fencing, ranching, and other industrial activities. KAM will aim to maintain access to Jacko Lake through construction of an alternative access road. The effect on plant gathering activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat rehabilitation.

Characterization of the Effects on AIB Plant Gathering Interests

Magnitude is considered negligible because effects are restricted to areas where the practice of plant gathering activities by AIB members is understood to not occur. The Project will not impede plant gathering in areas identified by AIB as preferred gathering sites (i.e., areas around Ashcroft).

Duration is anticipated to be far-future because of access to gathering areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected comprises a relatively small proportion of Nlaka'pamux traditional territory (0.05%).

Frequency of the residual effect are predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of plant gathering will be restricted permanently.

Context is considered low because other alternative plant gathering locations are available in the vicinity of the Project, near AIB reserves, where AIB can continue practicing plant gathering interests. Preferred sites identified by AIB (i.e., areas near Ashcroft) will not be affected.

Based on the characterization provided above and in consideration of the results of the assessment of effects to plant gathering as well as relevant VCs included in the Application/EIS, it is anticipated the Project would have a negligible effect on AIB's ability to practice plant gathering interests in the traditional territory.

Practice of Ceremonial Interests

To date, research conducted by KAM and consultation with AIB has not identified ceremonial practices within the vicinity of the Project although these activities likely occur within other areas of AIB's traditional territory and closer to key harvesting locations identified such as the areas around Ashcroft.

At the time of writing, no concerns about Project related effects on cultural heritage were raised by AIB. Consultation with AIB have not indicated Project related concerns regarding cultural heritage. KAM will continue to meet with Aboriginal Groups to address Project related concerns.

13.7.3.2 *Aboriginal Title*

The Project is located within the Nlaka'pamux Nation traditional territory. The Project is also located in an area over which the AIB assert Aboriginal title. Aboriginal title includes the right to determine the uses to which the land should be put and to benefit from the land.

The vast majority (90%) of the CULRTP LSA where the Project is located is private fee simple lands that were previously disturbed by past mining activities. KAM's acquisitions of lands for the Project have all been from private third parties; it has not purchased any Crown lands for the Project.

There exists uncertainty at law as to the interaction between Aboriginal title and private fee simple title. Given this uncertainty, there is potential for the Project to affect aspects of an Aboriginal title holder's rights if the lands are determined to be subject to Aboriginal title. This interference would last for at least 30-35 years.

At the time of writing, no use of the Project area for timber harvesting or mineral use was identified by AIB. This may be in part, because the vast majority of the lands in the Project area are private. However, the Project proposes an average annual production of 140 million pounds of copper and up to 130,000 ounces of gold in concentrate for a period of 23 years. Should the AIB identify mineral use in the Project area the Project activities will interfere with that use. With respect to timber, net volumes of merchantable timber in crown land within the mine site account for approximately

24,000 m³. Should the AIB identify timber harvesting in the Project area, these activities will be affected. Consultation with AIB has not indicated the use of the Project area for mineral use or timber harvesting. KAM will continue to meet with Aboriginal Groups to address Project related concerns. With respect to timber, net volumes of merchantable timber in crown land within the mine site account for approximately 24,000 m³.

Should AIB establish Aboriginal title, the Project has the potential to affect the AIB's ability to benefit economically from the areas where the Project is located. The interference with AIB economic title rights over these lands would last 30-35 years but would not interfere with AIB's ability to benefit economically from other lands in the traditional territory. The vast majority of the areas surrounding the Project are private (fee simple) property, therefore AIB's ability to benefit economically from this land has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities).

Conclusion

The overall effect on AIB fishing, hunting, and gathering interests is expected to be negligible. The Project is not anticipated to affect the ability of present and future generations to practice Aboriginal interests.

13.8 LOWER NICOLA INDIAN BAND

The LNIB is another one of 17 bands within the Nlaka'pamux Nation. LNIB identifies the Nlaka'pamux Nation territory as a reflection of their territory which is presented in Chapter 12, Figure 12.1-2 (LNIB, pers. comm., 2013b). During a meeting with KAM, LNIB reported they met with TteS in April 2013 to share information on the extent of the two Nations' traditional territories in relation to the Project. LNIB noted that elders in attendance believed both traditional territories overlapped the Project area. At the time, elders noted that according to tradition, Secwépemc people could walk to the Red Bridge in Kamloops but needed Nlaka'pamux permission to cross over to the south side of the Thompson River (LNIB, pers. comm., 2013b). The Nlaka'pamux traditional territory covers approximately 3,456,145 ha, of which 0.05% or 1,705 ha overlap the Project components (Figure 12.2-1 in Chapter 12).

13.8.1 Past, Current, and Anticipated Future Land Uses

LNIB members fished for salmon, hunted game, and gathered roots and berries. In the past, hunting was done in accordance with the boundaries dictated by heredity hunting grounds, meaning each family had their own region to hunt (Dawson, 1891). LNIB members engaged in traditional activities in the Nlaka'pamux territory, including hunting, fishing, gathering, and camping (Lower Nicola Indian Band, 2013).

LNIB members still participate in traditional practices such as gathering berries, picking mushrooms, hunting, and fishing (Lower Nicola Indian Band, 2013). In a letter from LNIB, it was also noted that LNIB continue to practice Aboriginal rights including hunting, fishing, and gathering within their traditional territory. The area surrounding the Project was also noted as significant cultural importance although no other detail was provided at the time of writing (LNIB, pers.

comm., 2012). During meetings with LNIB, representatives noted that they and their relatives had hunted in the Project area in the past and they know it well (LNIB, pers. comm., 2013a). Species targeted include deer and moose. LNIB members also consider Spences Bridge, where the Thompson and Nicola rivers meet, as an important location for salmon fishing (LNIB, pers. comm., 2013a). During meetings, LNIB representatives also identified Lac Le Juene area as a hunting and gathering location for members (LNIB, pers. comm., 2014).

KAM signed an agreement with LNIB that includes development of a TK/TLU study in the Project area. Where appropriate, additional information made available by LNIB will be considered in ongoing Project planning. Given the lack of information on future uses, the assessment assumes that future uses will continue at the current level.

13.8.2 Asserted LNIB Aboriginal Rights and Title

This section describes the key Aboriginal interests raised by LNIB up until July 31, 2015. KAM understands the importance of collecting and considering information on potentially affected asserted Aboriginal rights. With this in mind, KAM implemented the following approaches to collecting information on asserted rights with the LNIB:

- site tours;
- participation in LNIB Industry Forums;
- meetings with LNIB leadership; and
- literature reviews and secondary data collection.

Consultation is ongoing between KAM and LNIB, and may yield additional information. In addition, KAM provided capacity funding for the LNIB to complete a TK/TLU study. At the time of writing, preparations for the study were underway and will be considered (as appropriate) in ongoing Project planning. Detailed information on consultation activities undertaken with LNIB is provided in Chapter 15. Table 13.8-1 presents a summary of LNIB concerns and rights raised in relation to the Project.

13.8.3 LNIB Interest Effects Assessment and Mitigation

This section discusses how the practice of LNIB interests could be affected by the Project in each of its phases: Construction, Operation, Decommissioning and Closure, and Post-Closure. The analysis considers both potential direct and indirect effects of the Project and identifies interrelations between the VCs and the Aboriginal interests. This section also describes the measures that will be used to avoid, mitigate or otherwise accommodate potential effects.

CULRTP (Section 8.5) provides a detailed discussion of potential effects on Aboriginal land uses, including key interactions and relevant mitigation.

With respect to potential contamination of the resources harvested for consumption by Aboriginal Groups, the risk to human health associated with the ingestion of country foods, including fish, animals, and plants, has been assessed under the human health VC (Section 10.4). Mitigation measures

specific to human health were not been recommended. Mitigation measures to control air and dust emissions outlined in the air quality effects assessment (Section 10.1) and mitigation measures to control surface water and groundwater discharges outlined in the water quality effects assessment (Section 6.3) will reduce Project emissions to levels that are protective of human health.

Table 13.8-1. Summary of LNIB Interests (Rights and Title) Raised in Relation to the Project

Asserted Right	Concern	Manner Raised	Valued Component Affected
Fishing	Potential effects on the practice of Aboriginal fishing rights	Consultation	Fish Habitat and Fish Populations Current Use of Lands and Resources for Traditional Purposes Noise and Vibration
	Potential downstream effects from changes in water quantity and quality	Consultation	Fish Habitat and Fish Populations Surface Water Quality and Quantity Current Use of Lands and Resources for Traditional Purposes
Hunting	Potential effects from dust on cattle grazing and wildlife harvested in the area (near Lac Le Jeune)	Consultation	Mammals Air Quality Country Foods Current Use of Lands and Resources for Traditional Purposes Human Health
Plant Gathering	Potential effects from dust on food and medicinal plants harvesting in the area (near Lac Le Jeune)	Consultation	Rare Plants Air Quality Country Foods Current Use of Lands and Resources for Traditional Purposes Human Health
Cultural	Concern regarding mine's proximity to lands that are of cultural importance to LNIB	Consultation	Current Use of Lands and Resources for Traditional Purposes Archaeological and Heritage Sites
Title	LNIB asserted title in the traditional territory including the portion that overlaps with the Project	Consultation	Not applicable

13.8.3.1 Summary of Residual Effects on LNIB Interests

Practice of Fishing Interests

LNIB indicated they practice fishing in the traditional territory, which overlaps the Project area, although no specific fishing locations within the Project area were identified. The degree of use of this area, however, is anticipated to be limited, since other important fishing locations outside the Project area have been identified, such as Spences Bridge, at the confluence of the Thompson and Nicola rivers.

There will be effects at Jacko Lake, should the LNIB practice fishing interests there. Construction and Operation of the Project will result in the removal of the northeast arm of Jacko Lake which comprises 6% of the total area of Jacko Lake at full pool. It should be noted that this area that will be removed by the Project was originally created by artificially raising the water level of the lake. Water levels in Jacko Lake have actively been managed historically through dam raises, with the last raise occurring in 1990.

It is not expected that availability of rainbow trout in Jacko Lake will be affected. The results from the fish habitat and populations VC did not predict effects on the availability of rainbow trout for fishing. It also predicts no effects or loss of productivity in Jacko Lake as a result of ground vibrations generated by blasting.

Fish habitat mitigation and offsetting will aim to address harm to fish associated with direct habitat loss in Jacko Lake and Peterson Creek. Overall, after mitigation and compensation measures, it is expected that there will be gains in fish habitat, as a result of offsetting measures mainly around Inks Lake, which is in close proximity to Jacko Lake and within the Nlaka'pamux traditional territory. It is expected that a net fish habitat gain will be achieved, providing a greater availability of harvestable fish species for use by Aboriginal Groups.

During Construction and Operation, safety zones, enforced around the open pit during blasting periods, will include restricted access to fishing areas in Jacko Lake. Aboriginal Groups harvesters will be unable to engage in activities within the specified blasting buffer area for approximately two hours a day. KAM will have appropriate signage indicating blasting times and demarcating the area and will communicate with Aboriginal Groups likely blasting schedules.

During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed. However, KAM will maintain access to Jacko Lake through construction of an alternative access road to Jacko Lake south of the proposed access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to Jacko Lake.

Project related noise will be noticeable in the Jacko Lake, in particular during sheet piling activities taking place during Construction. These activities will occur during the day for a period of about two months and will represent the worst case scenario with respect to noise. The sheet piling activities will not "disallow" fishing in Jacko Lake; however, the enjoyment of the experience may be affected (subjective to the user for no longer than two months). However, noise will be noticeable during the remaining Construction phase.

There will be a moderate degree of visual effect during Construction and Operation at Jacko Lake (including the boat launch). It is anticipated that main project components such as the mine rock storage facilities and the TSF will be noticeable from Jacko Lake and lower Peterson Creek. The Peterson Creek downstream pond will be visible and may act as a barrier to users trying to access middle Peterson Creek. Visual disturbances will reduce to slight in some areas during Post-Closure.

In summary, preferred fishing sites identified by LNIB will not be affected by the Project (i.e., Spences Bridge, at the confluence of the Thompson and Nicola rivers). The Project affects a relatively small area of the overall Peterson Creek catchment (north east arm of Jacko Lake and middle Peterson

Creek), which is already affected by past projects and activities, and will not impede fishing in other areas of the catchment. A compensation and offsetting plan will be implemented that proposes to create fish availability and habitat in Inks Lake (within the Nlaka'pamux traditional territory). Access to Jacko Lake will be maintained similar to current conditions.

Characterization of the Effects on LNIB Fishing Interests

Magnitude is minor since the effects are restricted to a relatively small area and will not impede fishing in Jacko Lake or other areas of the catchment or in preferred fishing sites identified by LNIB (i.e., Spences Bridge).

Duration – The residual effect on fishing interests is anticipated to be far-future because of restricted access to portions of middle Peterson Creek will continue until Post-Closure.

Geographic extent is considered local as it will only affect limited fishing sites within the Peterson Creek watershed and do not extent to other watersheds. The Peterson Creek catchment area, including the areas where the Project is proposed, comprise a very small proportion of Nlaka'pamux Nation traditional territory (0.05%).

Frequency of the residual effect on fishing interests is predicted to be continuous during all phases of the Project.

Reversibility – The effect on fishing interest is expected to be partially reversed with the implementation of the fish habitat offsetting and by ceasing Project activities. The effect is considered reversible long-term.

Context is considered low because preferred fishing sites identified by LNIB will not be affected by the Project (i.e., Spences Bridge, at the confluence of the Thompson and Nicola rivers, which is over 100 km downstream of the Project). Consultation activities conducted to date, have not indicated that Jacko Lake or Peterson Creek are preferred fish harvesting locations for the LNIB. However, the LNIB have noted that the Nlaka'pamux traditional territory (also LNIB's traditional territory) overlaps with the Project.

Based on the characterization provided above and in consideration of the results of the assessment of effects to fishing as well as relevant VCs, it is anticipated that the Project would have a negligible effect on LNIB's ability to practice fishing interests in the traditional territory.

Practice of Hunting and Trapping Interests

LNIB indicated they continue to hunt in the traditional territory, which overlaps with the Project area, although no specific hunting locations were identified in the Project area. The degree of use of this area, however, is anticipated to be limited because the vast majority of the land in the Project footprint and surrounding area is private (fee simple) land. There are additional hunting locations in the traditional territory that are expected to be preferred. During consultation, LNIB representatives identified Lac Le Jeune area as a hunting location for members and expressed concerns about potential Project effects to that area. This area will not be affected by the Project. The Project footprint represents 0.05% of the Nlaka'pamux Nation traditional territory.

Changes in availability of wildlife species harvested by LNIB may occur due to habitat alteration, disturbance and displacement, and mortality. Habitat losses are assessed in Chapter 6 and Section 8.5. With respect to effects on species targeted, the mammals VC identified:

- No residual effects were predicted for moose and no critical moose habitat within the mammals LSA.
- Not significant (moderate) effects on losses of habitat for American Badger and Mule Deer. There will be some losses of critical deer winter range (32.8 ha) out of 449 ha within the Project infrastructure footprint. In total there is over 1,600 ha of critical deer winter range present in the RSA. There will be a loss of 1,163 ha (out of 4,229 ha) of high and moderate suitable badger habitat will be lost in the Project Footprint. 13 out of the 26 identified badger dig sites identified in the Project infrastructure footprint will be lost.
- With respect to noise, Project Construction and Operation may affect 3-10% of suitable wildlife habitat (deer, American badger) within the mammals LSA. However, habituation to routine disturbances over the length of the Project may reduce noise effects. With mitigation, residual effects to direct mortality for wildlife are not anticipated to affect wildlife availability for SSN harvesters in the traditional territory.

The non-migratory gamebirds VC identified:

- A loss of 1,084 ha of suitable grouse growing habitat in the Project Infrastructure Footprint out of 3,578 ha of suitable grouse growing habitat. 401 ha of suitable grouse winter habitat will be lost in the LSA. Within the non-migratory gamebirds LSA, there is over 1,260 ha of suitable grouse winter habitat.

Sensory disturbances during Construction, Operation, and Decommissioning and Closure may affect the experience of harvesting interests. Project-related noise, including traffic related noise, will be noticeable in the Jacko Lake area but are expected to cease during the Post-Closure phase. Noise from sheet piling activities at Jacko Lake (as described) will occur during the day, only for a period of approximately two months.

There will be a moderate degree of visual effect during Construction, Operation, and Decommissioning and Closure from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill. It is anticipated that the main Project components such as the mine rock storage facilities and the TSF will be noticeable from locations such as Jacko Lake and lower Peterson Creek. Visual disturbances will reduce to slight in some areas during the Post-Closure phase.

Hunting sites identified by LNIB will not be affected (i.e., Lac Le Jeune). The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already highly affected by past projects and activities) and Goose Lake (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, hunting/trapping in these areas is likely impeded as a result of fencing, ranching, and other industrial activities. KAM will facilitate access to Jacko Lake through construction of an alternative access road. The effect on hunting and trapping activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

Characterization of the Residual Effects on LNIB Hunting Interests

Magnitude is considered minor because of the losses of suitable habitat to grouse, badger and deer causing the loss of potential hunting areas within the Project footprint. These changes could affect the ability of LNIB members to practice hunting interests in these areas, although current hunting in these areas are limited.

Duration is anticipated to be far-future because of access to hunting areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected by the Project comprises a very small proportion of the Nlaka'pamux traditional territory (0.05%).

Frequency of the residual effect on LNIB hunting/trapping interests is predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of hunting will be restricted permanently.

Context is considered low because there is no indication that the Project area is an important hunting location for LNIB. There are relevant alternative hunting sites available near LNIB reserves where LNIB continue practicing hunting/trapping interests (i.e., Lac Le Jeune).

Based on the characterization provided above and in consideration of the results of the assessment of effects to hunting as well as relevant VCs, it is anticipated the Project would have a negligible effect on LNIB's ability to practice hunting/trapping interests in the traditional territory.

Practice of Plant Gathering Interests

LNIB indicated that they continue to harvest plants in the traditional territory, which overlaps with the Project area, although no specific gathering locations were identified in the Project area. The degree of use of this area, however, is anticipated to be limited given the vast majority of the land in the Project footprint and surrounding area is private (fee simple) land. There are additional plant gathering locations in the traditional territory outside of the Project footprint that are expected to be preferred. The Project footprint represents 0.05% of the Nlaka'pamux Nation traditional territory.

During consultation LNIB representatives identified the Lac Le Jeune area as a plant gathering location for members and expressed concerns about potential Project effects to that area. No Project effects are anticipated to this area.

Should LNIB gather plants in the areas surrounding the Project, access to plant gathering locations via Goose Lake Road will no longer be available for those portions of Goose Lake Road that will be closed. Goose Lake will be removed and will no longer be available for plant gathering activities, although gathering in this area is currently limited due to private property and fencing. Access to Peterson Creek, within the footprint of the mine, will continue to be inaccessible for plant gathering as well as

the areas of the proposed mine site. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to parts of Jacko Lake. However, KAM will maintain access to Jacko Lake through Construction of an alternative access road to Jacko Lake south of the proposed main access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to the areas surrounding Jacko Lake.

The Construction, Operation, and Decommissioning and Closure phases of the Project may produce a change in the experience of using lands and resources for plant gathering. Project-related noise will be noticeable in the Jacko Lake area. During Construction, Operation, and Decommissioning and Closure, air quality changes from dust has the potential to affect the experience of plant gathering if dust is noticeable. There will be a moderate degree of visual effect during Construction and Operation from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill.

Gathering sites identified by LNIB will not be affected (i.e., Lac Le Jeune). The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already affected by past projects and activities) and Goose Lake/portions of Goose Lake Road (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, gathering in these areas is likely impeded as a result of fencing, ranching, and other industrial activities. KAM will maintain access to Jacko Lake through Construction of an alternative access road. The effect on gathering activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

Characterization of the Effects on LNIB Gathering Interests

Magnitude is considered minor because losses of traditional plant habitat is limited to the Project footprint and access to the Project area will be continue to be restricted. These changes could affect the ability of LNIB members to practice gathering interests, although current gathering in these areas is limited.

Duration is anticipated to be far-future because of access to gathering areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected comprises a relatively small proportion of the Nlaka'pamux traditional territory (0.05%).

Frequency of the residual effect are predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of gathering will be restricted permanently.

Context is considered low because there is no indication that the Project area is an important gathering location for LNIB. There are relevant alternative hunting sites available near LNIB reserves where LNIB can continue practicing gathering interests. (i.e., Lac Le Jeune).

Based on the characterization provided above and in consideration of the results of the assessment of effects to plant gathering as well as relevant VCs, it is anticipated that the Project would have a negligible effect on LNIB's ability to practice plant gathering interests in their traditional territory.

Practice of Ceremonial Interests

To date, research conducted by KAM and consultation with LNIB has not identified ceremonial practices within the vicinity of the Project although these activities likely occur within other areas of the traditional territory. LNIB did express concerns regarding the Project's proximity to lands that are of cultural importance to LNIB, however no information on the general location of this area was provided. Consultation is ongoing between KAM and LNIB, and may yield additional information. In addition, KAM provided capacity funding for the LNIB to complete a TK/TLU study. At the time of writing, preparations for the study were underway and will be considered (as appropriate) in on-going Project planning.

At the time of writing, no concerns about Project related effects on cultural heritage were raised by LNIB. The LNIB was provided with capacity funding to develop a Project specific TLU/TK study which was underway at the time of writing. Once the study is complete, these will be considered in Project planning (to the extent possible).

13.8.3.2 *Aboriginal Title*

The Project is located within the Nlaka'pamux Nation traditional territory. The Project is also located in an area over which the LNIB assert Aboriginal title. Aboriginal title includes the right to determine the uses to which the land should be put and to benefit from the land. The vast majority (90%) of the CULRTP LSA where the Project is located is private fee simple lands that were previously disturbed by past mining activities. KAM's acquisitions of lands for the Project have all been from private third parties; it has not purchased any Crown lands for the Project.

There exists uncertainty at law as to the interaction between Aboriginal title and private fee simple title. Given this uncertainty, there is potential for the the Project to affect aspects of an Aboriginal title holder's rights if the lands are determined to be subject to Aboriginal title. This interference would last for at least 30-35 years.

At the time of writing, no use of the Project area for timber harvesting or mineral use was identified by LNIB. This may be in part, because the vast majority of the lands in the Project area are private. However, the Project proposes an average annual production of 140 million pounds of copper and up to 130,000 ounces of gold in concentrate for a period of 23 years. Should the LNIB identify mineral use in the Project area the Project activities will interfere with that use. With respect to timber, net volumes of merchantable timber in crown land within the mine site account for approximately 24,000 m³. Should the LNIB identify timber harvesting in the Project area, these activities will be affected. To date, consultation with LNIB has not indicated use of the Project area for mineral use or timber harvesting. The LNIB was provided with capacity funding to develop a Project specific TLU/TK study - which was underway at the time of writing. Once the study is complete, it will be considered in Project planning (to the extent possible). KAM will continue to meet with Aboriginal Groups to address Project related concerns.

Should LNIB establish Aboriginal title, the Project has the potential to affect the LNIB's ability to benefit economically from the areas where the Project is located. The interference with LNIB economic title rights over these lands would last 30-35 years but would not interfere with LNIB's ability to benefit economically from other lands in the traditional territory. The vast majority of the areas surrounding the Project are private (fee simple) property, therefore LNIB's ability to benefit economically from this land has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities).

Conclusion

The overall effect on LNIB's ability of practice fishing, hunting, and plant gathering interests is expected to be negligible. It is not anticipated that the Project will affect the ability of present and future generations to practice their Aboriginal interests, nor is it expected that the Project would require LNIB to modify its practices related to fishing, hunting, and gathering.

13.9 WHISPERING PINES / CLINTON INDIAN BAND

The WP/CIB are Secwépemc peoples, sharing a traditional territory that ranges from the Chilcotin and Cariboo Plateaus through to Kamloops (see Chapter 12, Figure 12.1-1 for more information). The Secwépemc traditional territory covers approximately 14,071,275 ha, of which 0.01% or 1,705 ha overlap the Project components (Figure 12.2-1 in Chapter 12).

13.9.1 Past, Current, and Anticipated Future Land Uses

In a letter sent by WP/CIB to KAM on May 12th, 2014, the WP/CIB indicated that the Project is located within the territory over which WP/CIB claim Aboriginal title as part of the Secwépemc Nation, and that it could impact a broad area where WP/CIB members practice Aboriginal rights.

A Traditional Land and Resource Use Technical Report prepared for the Trans Mountain Expansion Project by Terra Environmental Consultants identifies some current land uses for the WP/CIB (Terra Environmental Consultants 2013). Although the TK/TLU data provided is specific to sites surrounding the proposed multi-use pipeline, it can be used to infer some land uses that may also occur in areas surrounding the Project.

Plant gathering appears to be an important activity for members who harvest chokecherries, Saskatoon berries, rosehips, hawthorn berries, soapberries, raspberries, wild strawberries, thimbleberries, "black caps" (blackberries), bunchberries, skunk berries, and blueberries. Often the women gather berries and preserve them, particularly the more popular food plants such as blueberries, raspberries, and strawberries. In the spring, members harvest balsam bark and devil's club.

Members continue to participate in hunting and trapping activities and harvest deer (in particular mule deer), moose, and elk. The areas surrounding Whispering Pines IR #4 support a range of wildlife including cougar, bear, coyote, lynx, bobcat, fox and badger, as well as birds including the bald and golden eagle, turkey vulture, hawk, and blue heron (Terra Environmental Consultants 2013).

The extent to which harvesting around the Project vicinity occurs was unknown at the time of writing. Fishing continues today for the WP/CIB. The Thompson River (particularly the North Thompson River) is an important area for boating activity and also a location to catch rainbow trout, Dolly Varden, steelhead, bullhead, and sturgeon (Tera Environmental Consultants 2013). Table 12.2-29 summarizes species, harvesting locations, and the extent of use for the WP/CIB. KAM has signed an agreement with WP/CIB to develop a TK/TLU study in the Project area. Where appropriate, additional information made available by WP/CIB will be considered in on-going Project planning.

Given the lack of information on future uses, the assessment assumes that future uses will continue at the current level.

13.9.2 Asserted WP/CIB Aboriginal Rights and Title

This section describes the key Aboriginal interests raised by WP/CIB up until July 31, 2015. KAM understands the importance of collecting and considering information on potentially affected asserted Aboriginal rights. With this in mind, KAM implemented the following approaches to collecting information on asserted rights with the WP/CIB:

- meetings with WP/CIB leadership;
- written communication with WP/CIB; and
- literature reviews and secondary data collection.

In May 2015, KAM and WP/CIB signed a Capacity Funding Agreement to facilitate WP/CIB participation in the EA process. As part of this, the WP/CIB is developing a TK/TLU study for the Project. Detailed information on consultation activities undertaken with the WP/CIB is provided in Chapter 15. Table 13.9-1 presents a summary of WP/CIB interests raised in relation to the Project.

Table 13.9-1. Summary of WP/CIB Interests (Rights and Title) Raised in Relation to the Project

Asserted Right	Concern	Manner Raised	Valued Component Affected
Fishing	Potential effects on fish and fish habitat as a result of contamination of waterbodies (e.g., dust deposition) and/or cumulative effects	Consultation	Fish Habitat and Fish Populations Current Use of Lands and Resources for Traditional Purposes Air Quality Human Health
	Concern raised regarding potential effects of noise and vibration on fishing	Consultation	Fish Habitat and Fish Populations Noise and Vibration Current Use of Lands and Resources for Traditional Purposes
	Potential impacts of leaks, seepages or catastrophic tailings pond breaches on fish-bearing waterways	AIR/EIS Guidelines comments	Fish Habitat and Fish Populations

(continued)

Table 13.9-1. Summary of WP/CIB Interests (Rights and Title) Raised in Relation to the Project (completed)

Asserted Right	Concern	Manner Raised	Valued Component Affected
Hunting	Potential effects on hunted species from contamination and/or cumulative effects	Consultation	Mammals Country Foods Human Health Current Use of Lands and Resources for Traditional Purposes
	Effects on migratory birds which may use Goose Lake	AIR/EIS Guidelines comments	Migratory Birds Current Use of Lands and Resources for Traditional Purposes
	Concern raised regarding potential effects of noise and vibration on hunting	Consultation	Noise and Vibration Current Use of Lands and Resources for Traditional Purposes
Plant Gathering	Potential effects on harvested species from contamination and/or cumulative effects	Consultation	Country Foods Human Health Current Use of Lands and Resources for Traditional Purposes
	Potential soil contamination from fugitive dust emissions, which in turn affect plants, rare plants and sensitive and ecological communities	AIR/EIS Guidelines Comments Consultation	Air Quality Country Foods Human Health Current Use of Lands and Resources for Traditional Purposes
Title	WP/CIB indicated that the Project is located within the territory over which WP/CIB claim Aboriginal title as part of the Secwépemc Nation.	Consultation	Not Applicable

13.9.3 WP/CIB Rights Effects Assessment and Mitigation

13.9.3.1 Summary of Residual Effects on WP/CIB Interests

This section discusses how the practice of WP/CIB interests could be affected by the Project in each of its phases: Construction, Operation, Decommissioning and Closure, and Post-Closure. The analysis considers both potential direct and indirect effects of the Project and identifies interrelations between the VCs and the Aboriginal interests. This section also describes the measures that will be used to avoid, mitigate or otherwise accommodate potential effects.

CULRTP (Section 8.5) provides a detailed discussion of potential effects on Aboriginal land uses, including key interactions and relevant mitigation.

With respect to potential contamination of the resources harvested for consumption by Aboriginal Groups, the risk to human health associated with the ingestion of country foods, including fish, animals, and plants, has been assessed under the human health VC (Section 10.4). Mitigation measures specific to human health were not been recommended. Mitigation measures to control air and dust

emissions outlined in the air quality effects assessment (Section 10.1) and mitigation measures to control surface water and groundwater discharges outlined in the water quality effects assessment (Section 6.3) will reduce Project emissions to levels that are protective of human health.

Practice of Fishing Interests

WP/CIB indicated they continue to fish in their traditional territory, which overlaps with the Project area, although no specific fishing locations were identified in the Project area. The degree of use of the Project area, however, is anticipated to be limited. The Project footprint represents 0.01% of the Secwépemc Nation traditional territory. The vast majority of the land in the Project footprint and surrounding area is private (fee simple) land. Secondary information indicates that fishing by WP/CIB members occurs in the North Thompson River. No effects to the North Thompson River are anticipated.

There will be effects at Jacko Lake, should the WP/CIB practice fishing interests there. Construction and Operation of the Project will result in the removal of the northeast arm of Jacko Lake which comprises 6% of the total area of Jacko Lake at full pool. It should be noted that this area that will be removed by the Project was originally created by artificially raising the water level of the lake. Water levels in Jacko Lake have actively been managed historically through dam raises, with the last raise occurring in 1990.

The results from the fish habitat and populations VC did not predict effects on the availability of rainbow trout for fishing. It also predicts no effects or loss of productivity in Jacko Lake as a result of ground vibrations generated by blasting. Fish habitat compensation and offsetting will aim to address effects to fish habitat associated with direct habitat loss in Jacko Lake and Peterson Creek. Overall, after mitigation and compensation measures, it is expected that there will be gains in fish habitat, as a result of offsetting measures mainly around Inks Lake, which is in close proximity to Jacko Lake and within the Secwépemc traditional territory. It is expected that a net fish habitat gains will be achieved, providing a greater availability of harvestable fish species for use by Aboriginal Groups.

During Construction and Operation, safety zones, enforced around the open pit during blasting periods, will include restricted access to fishing areas in Jacko Lake. Aboriginal Groups harvesters will be unable to engage in activities within the specified blasting buffer area for approximately two hours a day. KAM will have appropriate signage indicating blasting times and demarcating the area and will communicate with Aboriginal Groups likely blasting schedules.

During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed. However, KAM will maintain access to Jacko Lake through construction of an alternative access road to Jacko Lake south of the proposed access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to Jacko Lake.

Project related noise will be noticeable in the Jacko Lake, in particular during sheet piling activities taking place during Construction. These activities will occur during the day for a period of about two months and will represent the worst case scenario with respect to noise. The sheet piling activities will not “disallow” fishing in Jacko Lake; however, the enjoyment of the experience may be affected (subjective to the user for no longer than two months). However, noise will be noticeable during the remaining Construction phase.

There will be a moderate degree of visual effect during Construction and Operation at Jacko Lake (including the boat launch). It is anticipated that main project components such as the mine rock storage facilities and the TSF will be noticeable from Jacko Lake and lower Peterson Creek. The Peterson Creek downstream pond will be visible and may act as a barrier to users trying to access middle Peterson Creek. Visual disturbances will reduce to slight in some areas during Post-Closure.

In summary, fishing activities by WP/CIB within the project area are expected to be limited. Effects are not anticipated in the North Thompson River, which is an important area to the WP/CIB for boating and rainbow trout fishing by members. The Project affects a relatively small area of the overall Peterson Creek catchment, which is already affected by past projects and activities, and will not impede fishing in other areas of the catchment. A compensation and offsetting plan will be implemented that proposes to create fish availability and habitat in Inks Lake (within the Secwépemc Nation traditional territory). Access to Jacko Lake will be maintained similar to current conditions.

Characterization of the Effects on WP/CIB Fishing Interests

Magnitude is considered minor since the effects are restricted to a relatively small area and will not impede fishing in Jacko Lake or other areas or other sites where WP/CIB are more likely to practice fishing interests (i.e., North Thompson River).

Duration – The residual effect on fishing interests is anticipated to be far-future because of restricted access to portions of middle Peterson Creek will continue until Post-Closure.

Geographic extent is considered local as it will only affect limited fishing sites within the Peterson Creek watershed and does not extend to other watersheds. The Peterson Creek catchment area, including the areas where the Project is proposed, comprise a very small proportion of the Secwépemc traditional territory.

Frequency of the residual effect on fishing interests is predicted to be continuous during all phases of the Project.

Reversibility – The effect on fishing interests is expected to be partially reversed with the implementation of the fish habitat offsetting and mitigation when Project activities cease. This effect is considered reversible long term.

Context is considered low, because there are alternative fishing locations within the Secwépemc traditional territory that are anticipated to be preferred by WP/CIB such as the North Thompson River, where WP/CIB can continue practicing fishing interests. The areas around Clinton, which is approximately 120 km from the Project (where the WP/CIB reserves are located) also support fishing. Consultation activities conducted to date, have not indicated that Jacko Lake or Peterson Creek are preferred fish harvesting locations for the WP/CIB.

Based on the characterization provided above and in consideration of the results of the assessment of effects to fishing as well as relevant VCs included, it is anticipated that the Project will have a negligible effect on WP/CIB's ability to practice fishing interests in the traditional territory.

Practice of Hunting and Trapping Interests

WP/CIB indicated that they continue to hunt in their traditional territory, which overlaps with the Project area, although no specific plant gathering locations were identified in the Project area. The degree of use of the Project area, however, is anticipated to be limited because the vast majority of the land in the Project footprint and surrounding area is private (fee simple) land. Secondary information indicates that hunting activities by WP/CIB members occur in areas surrounding Whispering Pines IR #4 (approximately 120 km from the Project) and the area west of the North Thompson River. These areas will not be affected by the Project. The Project footprint represents 0.01% of the Secwépemc Nation traditional territory.

Changes in availability of wildlife species harvested by WP/CIB may occur due to habitat alteration, disturbance and displacement, and mortality. Habitat losses are assessed in Sections 6.17 and 8.5. With respect to effects on species targeted, the mammals VC identified:

- No residual effects were predicted for moose and no critical moose habitat within the mammals LSA.
- Not significant (moderate) effects on losses of habitat for American Badger and Mule Deer. There will be some losses of critical deer winter range (32.8 ha) out of 449 ha within the Project infrastructure footprint. In total there is over 1,600 ha of critical deer winter range present in the RSA. There will be a loss of 1,163 ha (out of 4,229 ha) of high and moderate suitable badger habitat will be lost in the Project Footprint. 13 out of the 26 identified badger dig sites identified in the Project infrastructure footprint will be lost.
- With respect to noise, Project Construction and Operation may affect 3-10% of suitable wildlife habitat (deer, American badger) within the mammals LSA. However, habituation to routine disturbances over the length of the Project may reduce noise effects. With mitigation, residual effects to direct mortality for wildlife are not anticipated to affect wildlife availability for SSN harvesters in the traditional territory.

The non-migratory gamebirds VC identified:

- A loss of 1,084 ha of suitable grouse growing habitat in the Project Infrastructure Footprint out of 3,578 ha of suitable grouse growing habitat. 401 ha of suitable grouse winter habitat will be lost in the LSA. Within the non-migratory gamebirds LSA, there is over 1,260 ha of suitable grouse winter habitat.

Sensory disturbances during Construction, Operation, and Decommissioning and Closure may affect the experience of harvesting interests. Project-related noise, including traffic related noise, will be noticeable in the Jacko Lake area but are expected to cease during the Post-Closure phase. Noise from sheet piling activities at Jacko Lake (as described) will occur during the day, only for a period of approximately two months.

There will be a moderate degree of visual effect during Construction, Operation, and Decommissioning and Closure from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill. It is anticipated that

the main Project components such as the mine rock storage facilities and the TSF will be noticeable from locations such as Jacko Lake and lower Peterson Creek. Visual disturbances will reduce to slight in some areas during the Post-Closure phase.

Areas around Whispering Pines IR #4 and the area west of the North Thompson River, where WP/CIB members practice hunting/trapping interests, will not be affected. The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already highly affected by past projects and activities) and Goose Lake (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, hunting/trapping in these areas is likely affected as a result of fencing, ranching, and other industrial activities. KAM will maintain access to Jacko Lake through construction of an alternative access road. The habitat effects in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

Characterization of the Effect on WP/CIB Hunting Interests

Magnitude is considered minor since the loss of potential hunting areas is restricted to the Project footprint, where the practice of hunting activities by WP/CIB members is understood to be limited. Hunting locations identified by WP/CIB (i.e., areas around Clinton, 120 km from the Project) will not be affected.

Duration is anticipated to be far-future because access to areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected by the Project comprises a very small proportion of Secwépemc traditional territory (a maximum of 0.01%).

Frequency of the residual effect on WP/CIB hunting interests is predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of hunting will be restricted permanently

Context is considered low because there is no indication that the Project area is an important hunting location for WP/CIB. There are alternative hunting and trapping locations available near WP/CIB reserves where WP/CIB can continue practicing hunting interests (i.e., areas surrounding Whispering Pines IR #4 and in areas west of the Thompson River).

Based on the characterization provided above and in consideration of the results of the assessment of effects to hunting as well as relevant VCs, it is anticipated that the Project would have a negligible effect on WP/CIB's ability to practice hunting interests in their traditional territory.

Practice of Plant Gathering Interests

WP/CIB indicated they harvest plants in the larger traditional territory, a small (0.01%) portion of which overlaps with the Project area. No specific gathering locations were identified in the Project area by the WP/CIB. The degree of use of the Project area, however, is anticipated to be limited because the vast majority of the land in the Project footprint and surrounding area is private (fee simple) land. Secondary information indicates that plant gathering activities by WP/CIB members are more likely to occur in areas surrounding Whispering Pines IR #4 (120 km from the Project) and the area west of the North Thompson River. These areas will not be affected by the Project.

Should WP/CIB gather plants in the areas surrounding the Project, access to plant gathering locations via Goose Lake Road will no longer be available for those portions of Goose Lake Road that will be closed. Goose Lake will be removed and will no longer be available for plant gathering activities, although gathering in this area is currently limited due to private property and fencing. Access to Peterson Creek, within the footprint of the mine, will continue to be inaccessible for plant gathering as well as the areas of the proposed mine site. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to parts of Jacko Lake. However, KAM will maintain access to Jacko Lake through Construction of an alternative access road to Jacko Lake south of the proposed main access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to the areas surrounding Jacko Lake.

The Construction, Operation, and Decommissioning and Closure phases of the Project may produce a change in the experience of using lands and resources for plant gathering. Project-related noise will be noticeable in the Jacko Lake area. During Construction, Operation, and Decommissioning and Closure, air quality changes from dust has the potential to affect the experience of plant gathering if dust is noticeable. There will be a moderate degree of visual effect during Construction and Operation from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill.

Areas around Whispering Pines IR #4 and the area west of the North Thompson River, where WP/CIB members practice plant gathering will not be affected. The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already affected by past projects and activities) and Goose Lake/portions of Goose Lake Road (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, plant gathering in these areas is likely affected as a result of fencing, ranching, and other industrial activities. KAM will maintain access to Jacko Lake through construction of an alternative access road. The effect on plant gathering activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

Characterization of the Effects on WP/CIB Plant Gathering Interests

Magnitude is considered minor because traditional plants habitat losses are limited to the Project, where the practice of plant gathering activities by WP/CIB members is not expected. Plant gathering locations identified by WP/CIB (i.e., areas around Clinton) will not be affected.

Duration is anticipated to be far-future because of access to plant gathering areas within the Project footprint are expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The area potentially affected by the Project comprises a very small proportion of Secwépemc traditional territory (0.01%).

Frequency of the residual effect on WP/CIB plant gathering interests is predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of plant gathering will be restricted permanently.

Context is considered low because there is no indication that the Project area is an important plant gathering location for WP/CIB. There are alternative gathering sites available near WP/CIB reserves where WP/CIB can continue practicing gathering interests (i.e., areas surrounding Whispering Pines IR #4, approximately 120 km from the Project, and in areas west of the Thompson River).

Based on the characterization provided above and in consideration of the results of the assessment of effects to plant gathering as well as relevant VCs, it is anticipated that the Project would have a negligible effect on WP/CIB's ability to practice gathering interests in their traditional territory.

Practice of Ceremonial Use Interests

To date, research conducted by KAM and consultation with WP/CIB has not identified ceremonial practices within the vicinity of the Project although these activities likely occur within other areas of the traditional territory and closer to key harvesting locations identified such as the Clinton area and areas west of the Thompson River.

Consultation is ongoing between KAM and WP/CIB, and may yield additional information. In addition, KAM provided capacity funding for the WP/CIB to complete a TK/TLU study. At the time of writing, preparations for the study were underway and will be considered (as appropriate) in on-going Project planning.

At the time of writing, no concerns about Project related effects on cultural heritage were raised by WP/CIB. Consultation with MNBC have not indicated Project related concerns regarding cultural heritage. KAM will continue to meet with Aboriginal Groups to address Project related concerns. KAM also provided capacity funding for the WP/CIB to complete a TK/TLU study to identify concerns such as effects to cultural heritage.

13.9.3.2 *Aboriginal Title*

In a letter sent by WP/CIB to KAM on May 12th, 2014, the WP/CIB indicated that the Project is located within the territory over which WP/CIB claim Aboriginal title as part of the Secwépemc Nation. Aboriginal title includes the right to determine the uses to which the land should be put and to benefit from the land.

The vast majority (90%) of the CULRTP LSA where the Project is located is private fee simple lands that were previously disturbed by past mining activities. KAM's acquisitions of lands for the Project have all been from private third parties; it has not purchased any Crown lands for the Project.

There exists uncertainty at law as to the interaction between Aboriginal title and private fee simple title. Given this uncertainty, there is potential for the the Project to affect aspects of an Aboriginal title holder's rights if the lands are determined to be subject to Aboriginal title. This interference would last for at least 30-35 years.

Should WP/CIB establish Aboriginal title, the Project has the potential to affect the WP/CIB's ability to benefit economically from the areas where the Project is located. The interference with WP/CIB economic title rights over these lands would last 30-35 years but would not interfere with WP/CIB's ability to benefit economically from other lands in the traditional territory. The vast majority of the areas surrounding the Project are private (fee simple) property, therefore WP/CIB's ability to benefit economically from this land has already been disturbed (i.e., as a result of the previous Cominco mine activities and the extent of fencing, ranching and other industrial activities).

Conclusion

The overall effect on WP/CIB fishing, hunting, and plant harvesting interests is expected to be negligible. It is not anticipated that the Project will affect the ability of present and future generations to practice their Aboriginal interests, nor is it expected that the Project would require WP/CIB to modify its practices related to fishing, hunting, and plant gathering.

13.10 MÉTIS NATION

In 2014, KAM provided MNBC with funding to support information-sharing and engagement in the Project and to obtain feedback from Métis chartered communities in the Thompson/Okanagan region. MNBC developed a report which provides a summary of the feedback received at community information sessions from members. The report titled MNBC - KGHM/Ajax Mine Initial Project Report, December 2014 (the Initial Project Report) was developed using a database of Métis harvesters to identify Métis land users in the Project vicinity.

13.10.1 Past, Current, and Anticipated Future Land Uses

Métis people have a culture that is recognized by Canada as a distinct population with its own languages, history, and cultural traditions. The MNBC, unlike other Aboriginal Groups, does not claim territories; instead, on behalf of their citizens, they assert rights and traditional uses over the entire province.

There are 52 Harvester Card holders in the Kamloops area. They harvest mule deer, white-tail deer, moose, grouse, migratory birds, and plants such as medicinal plants, berries, and firewood (MNBC, pers. comm., 2014). Harvester Cards grant Métis people in BC limited harvesting rights but does not authorize freshwater fishing, saltwater fishing, hunting (other than migratory birds), cutting timber or trapping (MNBC website, n.d.). It should be noted that not all Métis citizens possess harvester cards and therefore there may be more Métis harvesters within the vicinity of the Project.

The Initial Project Report notes there are five management units within the Project area. Land use activities within these areas include hunting, trapping, fishing, gathering (food and medicines), gathering of firewood, cultural sites, and spiritual practices, camping and hiking.

During the community information sessions, Métis citizens noted concern about potential effects to Jacko Lake where some citizens may be harvesting fish. Citizens also identified Goose Lake as a plant gathering area for some citizens (MNBC, 2014). They also raised concerns about potential effects to badgers that may be present in the Project area. At the time of writing, no other TLU information for the Project area was available.

Given the lack of information on future uses, the assessment assumes that future uses will continue at the current level.

13.10.2 Asserted MNBC Aboriginal Rights

This section describes the key Aboriginal interests raised by MNBC up until July 31, 2015. KAM understands the importance of collecting and considering information on potentially affected asserted Aboriginal rights. With this in mind, KAM implemented the following approaches to collecting information on asserted rights with the MNBC:

- funding for MNBC - KGHM/Ajax Mine Initial Project Report;
- meetings with MNBC leadership; and
- literature reviews and secondary data collection.

Detailed information on consultation activities undertaken with the MNBC is provided in Chapter 15. Table 13.10-1 presents a summary of MNBC interests raised in relation to the Project.

13.10.3 MNBC Rights Effects Assessment and Mitigation

This section discusses how the practice of MNBC interests could be affected by the Project in each of its phases: Construction, Operation, Decommissioning and Closure, and Post-Closure. The analysis considers both potential direct and indirect effects of the Project and identifies interrelations between the VCs and the Aboriginal interests. This section also describes the measures that will be used to avoid, mitigate or otherwise accommodate potential effects.

This section describes the residual effects on the MNBC practices with respect to fishing, hunting/trapping, and plant gathering.

CULRTP (Section 8.5) provides a detailed discussion of potential effects on Aboriginal land uses, including key interactions and relevant mitigation.

With respect to potential contamination of the resources harvested for consumption by Aboriginal Groups, the risk to human health associated with the ingestion of country foods, including fish, animals, and plants, has been assessed under the human health VC (Section 10.4). Mitigation measures specific to human health were not been recommended. Mitigation measures to control air and dust emissions outlined in the air quality effects assessment (Section 10.1) and mitigation measures to control surface water and groundwater discharges outlined in the water quality effects assessment (Section 6.3) will reduce Project emissions to levels that are protective of human health.

Table 13.10-1. Summary of MNBC Interests Raised in Relation to the Project

Asserted Right	Concern	Manner Raised	Valued Component Affected
Fishing	Potential effects of blasting vibration on fish and fish habitat (Jacko Lake)	Consultation Ajax Mine Initial Project Report	Fish Habitat and Fish Populations Noise and Vibration Current Use of Lands and Resources for Traditional Purposes
Hunting	Potential effects on harvesting of mule deer and white-tail deer in the Kamloops area and Goose Lake	Consultation	Mammals Current Use of Lands and Resources for Traditional Purposes
	Potential effects of increased access on wildlife habitats	Ajax Mine Initial Project Report Consultation	Mammals Current Use of Lands and Resources for Traditional Purposes
	Potential effects on endangered species with habitat in the mine site	Ajax Mine Initial Project Report Consultation	Mammals Current Use of Lands and Resources for Traditional Purposes
	Potential effects on wildlife that may access the TSF such as ducks	Consultation	Mammals Migratory Birds Current Use of Lands and Resources for Traditional Purposes
	Potential effects of light and heat on wildlife movement (than predation)	Consultation	Mammals Migratory Birds Current Use of Lands and Resources for Traditional Purposes
Gathering	Effects on medicinal and food plants and firewood, particularly around Goose Lake where gathering may occur	Ajax Mine Initial Project Report Consultation	Rare Plants Current Use of Lands and Resources for Traditional Purposes

Practice of Fishing Interests

The Project could result in effects on MNBC’s right to fish in or near the Project footprint, in particular in Jacko Lake, where fishing activities by MNBC citizens are stated to occur.

Construction and Operation of the Project will result in the removal of the northeast arm of Jacko Lake which comprises 6% of the total area of Jacko Lake at full pool. It should be noted that this area that will be removed by the Project was originally created by artificially raising the water level of the lake. Water levels in Jacko Lake have actively been managed historically through dam raises, with the last raise occurring in 1990.

The results from the fish habitat and populations VC did not predict effects on the availability of rainbow trout for fishing. It also predicts no effects or loss of productivity in Jacko Lake as a result of ground vibrations generated by blasting. Fish habitat compensation and offsetting will aim to address effects to fish habitat associated with direct habitat loss in Jacko Lake and Peterson Creek. Overall, after mitigation and compensation measures, it is expected that there will be gains in fish habitat, as a result of offsetting measures mainly around Inks Lake, which is in close proximity to Jacko Lake and

within the Secwépemc traditional territory. It is expected that a net fish habitat gains will be achieved, providing a greater availability of harvestable fish species for use by Aboriginal Groups.

During Construction and Operation, safety zones, enforced around the open pit during blasting periods, will include restricted access to fishing areas in Jacko Lake. Aboriginal Groups harvesters will be unable to engage in activities within the specified blasting buffer area for approximately two hours a day. KAM will have appropriate signage indicating blasting times and demarcating the area and will communicate with Aboriginal Groups likely blasting schedules.

During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed. However, KAM will maintain access to Jacko Lake through construction of an alternative access road to Jacko Lake south of the proposed access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to Jacko Lake.

Project related noise will be noticeable in the Jacko Lake, in particular during sheet piling activities taking place during Construction. These activities will occur during the day for a period of about two months and will represent the worst case scenario with respect to noise. The sheet piling activities will not “disallow” fishing in Jacko Lake; however, the enjoyment of the experience may be affected (subjective to the user for no longer than two months). However, noise will be noticeable during the remaining Construction phase.

There will be a moderate degree of visual effect during Construction and Operation at Jacko Lake (including the boat launch). It is anticipated that main project components such as the mine rock storage facilities and the TSF will be noticeable from Jacko Lake and lower Peterson Creek. The Peterson Creek downstream pond will be visible and may act as a barrier to users trying to access middle Peterson Creek. Visual disturbances will reduce to slight in some areas during Post-Closure.

The Project affects a relatively small area of the overall Peterson Creek catchment (north east arm of Jacko Lake and middle Peterson Creek), which is already affected by past projects and activities, and will not impede fishing in other areas of the catchment. A compensation and offsetting plan will be implemented that proposes to create fish availability and habitat in Inks Lake, close to Jacko Lake. Access to Jacko Lake will be maintained similar to current conditions.

Characterization of the Effects on MNBC Fishing Interests

Magnitude is minor since the effects are restricted to a relatively small area (north east arm of Jacko Lake and middle Peterson Creek catchment), and will not impede fishing in Jacko Lake or other areas of the catchment. Access to Jacko Lake will be maintained relatively similar to current conditions but some portions of Jacko Lake will be temporary restricted while blasting is conducted.

Duration – The residual effect on fishing interests is anticipated to be far-future because of restricted access to portions of middle Peterson Creek will continue until Post-Closure.

Geographic extent is considered local as the effect is limited to areas within the Project footprint. The Project affects a small portion of the larger region where the MNBC harvester cardholders reside (Ashcroft, Merritt, Kamloops).

Frequency of the residual effect on fishing interests are predicted to be continuous during all phases of the Project.

Reversibility – The effect on fishing interests is expected to be partially reversed with the implementation of the fish habitat offsetting and when Project activities cease. The effect is considered reversible long term.

Context is considered low because there are many fishing opportunities in the vicinity of the Project and within the region where MNBC members can continue practicing fishing interests.

Based on the characterization provided above and in consideration of the results of the assessment of effects to fishing as well as relevant VCs, it is anticipated that the Project would have a negligible effect on MNBC's ability to practice fishing interests.

Practice of Hunting and Trapping Interests

The Project could result in effects on MNBC should they be hunting or trapping near the Project footprint. Changes in availability of wildlife species harvested by MNBC may occur due to habitat alteration, disturbance and displacement, and mortality. Habitat losses are assessed in Sections 6.17 and 8.5. With respect to effects on species targeted, the mammals VC identified:

- No residual effects were predicted for moose and no critical moose habitat within the mammals LSA.
- Not significant (moderate) effects on losses of habitat for American Badger and Mule Deer. There will be some losses of critical deer winter range (32.8 ha) out of 449 ha within the Project infrastructure footprint. In total there is over 1,600 ha of critical deer winter range present in the RSA. There will be a loss of 1,163 ha (out of 4,229 ha) of high and moderate suitable badger habitat will be lost in the Project Footprint. 13 out of the 26 identified badger dig sites identified in the Project infrastructure footprint will be lost.
- With respect to noise, Project Construction and Operation may affect 3-10% of suitable wildlife habitat (deer, American badger) within the mammals LSA. However, habituation to routine disturbances over the length of the Project may reduce noise effects. With mitigation, residual effects to direct mortality for wildlife are not anticipated to affect wildlife availability for SSN harvesters in the traditional territory.

The non-migratory gamebirds VC identified:

- A loss of 1,084 ha of suitable grouse growing habitat in the Project Infrastructure Footprint out of 3,578 ha of suitable grouse growing habitat. 401 ha of suitable grouse winter habitat will be lost in the LSA. Within the non-migratory gamebirds LSA, there is over 1,260 ha of suitable grouse winter habitat.

Sensory disturbances during Construction, Operation, and Decommissioning and Closure may affect the experience of harvesting interests. Project-related noise, including traffic related noise, will be noticeable in the Jacko Lake area but are expected to cease during the Post-Closure phase. Noise from sheet piling activities at Jacko Lake (as described) will occur during the day, only for a period of approximately two months.

There will be a moderate degree of visual effect during Construction, Operation, and Decommissioning and Closure from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill. It is anticipated that the main Project components such as the mine rock storage facilities and the TSF will be noticeable from locations such as Jacko Lake and lower Peterson Creek. Visual disturbances will reduce to slight in some areas during the Post-Closure phase.

Areas around Whispering Pines IR #4 and the area west of the North Thompson River, where WP/CIB members practice hunting/trapping interests, will not be affected. The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already highly affected by past projects and activities) and Goose Lake (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, hunting/trapping in these areas is likely affected as a result of fencing, ranching, and other industrial activities. KAM will maintain access to Jacko Lake through construction of an alternative access road. The habitat effects in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already highly affected by past projects and activities) and Goose Lake (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, hunting in these areas is likely affected as a result of fencing, ranching, and other industrial activities. The effect on hunting and trapping activities in the Project footprint can be reversed during Post-Closure mainly through habitat reclamation.

Characterization of the Residual Effects on MNBC Hunting Interests

Magnitude is considered minor because of the losses of suitable habitat to grouse, badger and deer within the Project footprint causing the loss of potential hunting areas.

Duration is anticipated to be far-future because habitat rehabilitation will be completed during the closure phase and access to areas within the Project footprint will continue to be restricted into the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint.

Frequency of the residual effect are predicted to be continuous during all phases of the Project.

Reversibility – The residual effects can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit will be restricted permanently.

Context is considered low because other hunting opportunities are available within the region where MNBC can continue practicing hunting interests.

Based on the characterization provided above and in consideration of the results of the assessment of effects to hunting activities as well as relevant VCs, it is anticipated the Project would have a negligible effect on MNBC's ability to practice hunting interests in their traditional territory.

Practice of Plant Gathering Interests

The Project could result in effects on MNBC's plant gathering interests in or near the Project footprint, in particular around Goose Lake, where plant gathering activities by some MNBC citizens occur.

Should MNBC gather plants in the areas surrounding the Project, access to plant gathering locations via Goose Lake Road will no longer be available for those portions of Goose Lake Road that will be closed. Goose Lake will be removed and will no longer be available for plant gathering activities, although gathering in this area is currently limited due to private property and fencing. Access to Peterson Creek, within the footprint of the mine, will continue to be inaccessible for plant gathering as well as the areas of the proposed mine site. During Construction, Operation, and Decommissioning and Closure, roads within the mine site will be closed which will affect access to parts of Jacko Lake. However, KAM will maintain access to Jacko Lake through Construction of an alternative access road to Jacko Lake south of the proposed main access to the Project. KAM will also construct an additional parking lot area to facilitate continued access to the areas surrounding Jacko Lake.

The Construction, Operation, and Decommissioning and Closure phases of the Project may produce a change in the experience of using lands and resources for plant gathering. Project-related noise will be noticeable in the Jacko Lake area. During Construction, Operation, and Decommissioning and Closure, air quality changes from dust has the potential to affect the experience of plant gathering if dust is noticeable. There will be a moderate degree of visual effect during Construction and Operation from Jacko Lake (including the boat launch), Goose Lake Road (East and West), the Lac Le Jeune Road #1 and Haul Road, Inks Lake, and Coal Hill.

The Project affects a relatively small area (north east arm of Jacko Lake and middle Peterson Creek which is already affected by past projects and activities) and Goose Lake/portions of Goose Lake Road (where access is already limited due to private property and fencing). Given that the vast majority of the areas surrounding the Project are private property, plant gathering in these areas is likely affected as a result of fencing, ranching, and other industrial activities. The effect on plant gathering activities in the Project footprint can be reversed during the Post-Closure phase mainly through habitat reclamation.

Characterization of the Residual Effects on MNBC Gathering Interests

Magnitude is considered minor because of the losses of potential plant gathering areas surrounding Goose Lake and Goose Lake Road. These changes could affect the ability of MNBC members to practice plant gathering interests in these areas.

Duration is anticipated to be far-future because habitat rehabilitation will be completed during the closure phase and access to plant gathering areas within the Project footprint is expected to be restricted until the Post-Closure phase.

Geographic extent is considered local as the effect is limited to areas within the Project footprint.

Frequency of the effect on MNBC plant gathering interests is predicted to be continuous during all phases of the Project.

Reversibility – The residual effects on MNBC gathering interests can be partially reversed in the long-term, once Project activities cease and the Closure and Reclamation activities are fully implemented. However, access to the open pit for the practice of plant gathering will be restricted permanently.

Context is considered low because there are other plant gathering opportunities within the region where MNBC could continue practicing this interest.

Based on the characterization provided above and in consideration of the results of the assessment of effects to plant gathering as well as relevant VCs included in the Application/EIS, it is anticipated that the Project would have a negligible effect on MNBC’s ability to practice plant gathering interests.

Practice of Ceremonial Use Interests

To date, research conducted by KAM and consultation with MNBC has not identified ceremonial practices within the vicinity of the Project although these activities likely occur within the region for MNBC members.

At the time of writing, no concerns about Project-related effects on cultural heritage or mineral and timber use were raised by the MNBC. Consultation with MNBC have not indicated Project related concerns regarding these issues. KAM will continue to meet with Aboriginal Groups to address Project-related concerns.

Conclusion

The overall effect on MNBC fishing, hunting, and plant harvesting interests is expected to be negligible. It is not anticipated that the Project will affect the ability of present and future generations to practice their Aboriginal interests, nor is it expected that the Project would require MNBC to modify its practises related to fishing, hunting, and plant gathering.

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